

SHIPPING WORLD



VOL. 145 No. 3566

13 DECEMBER 1961

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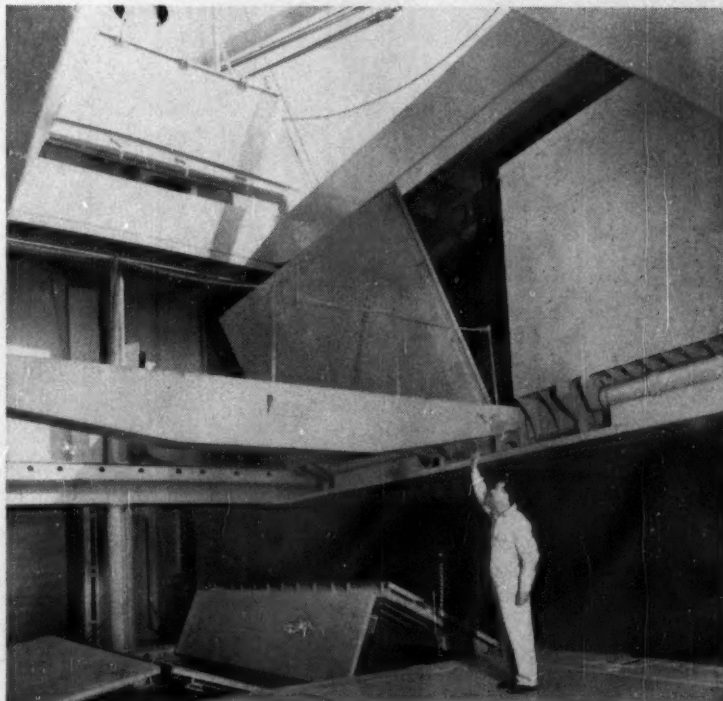
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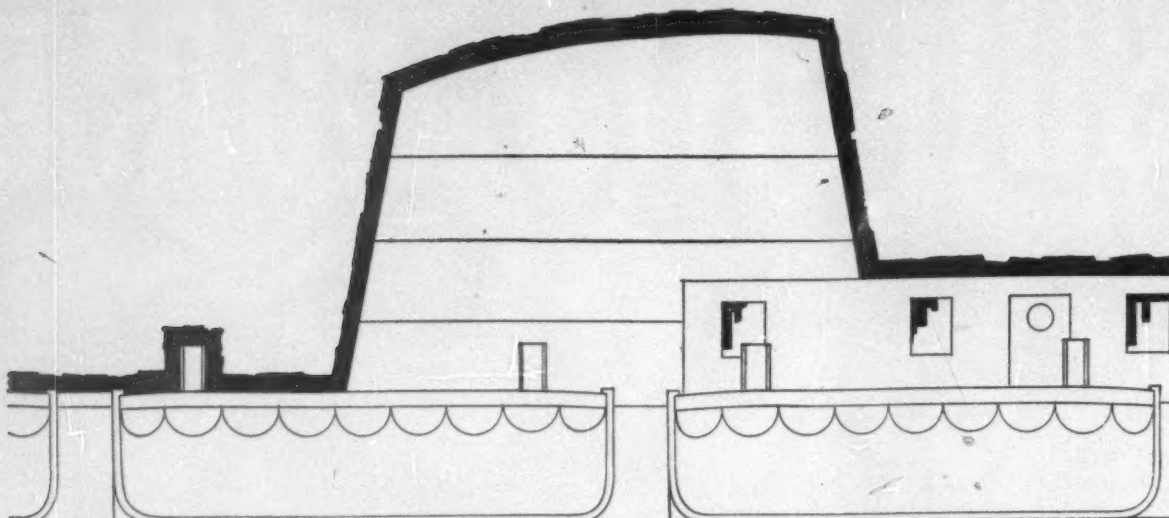
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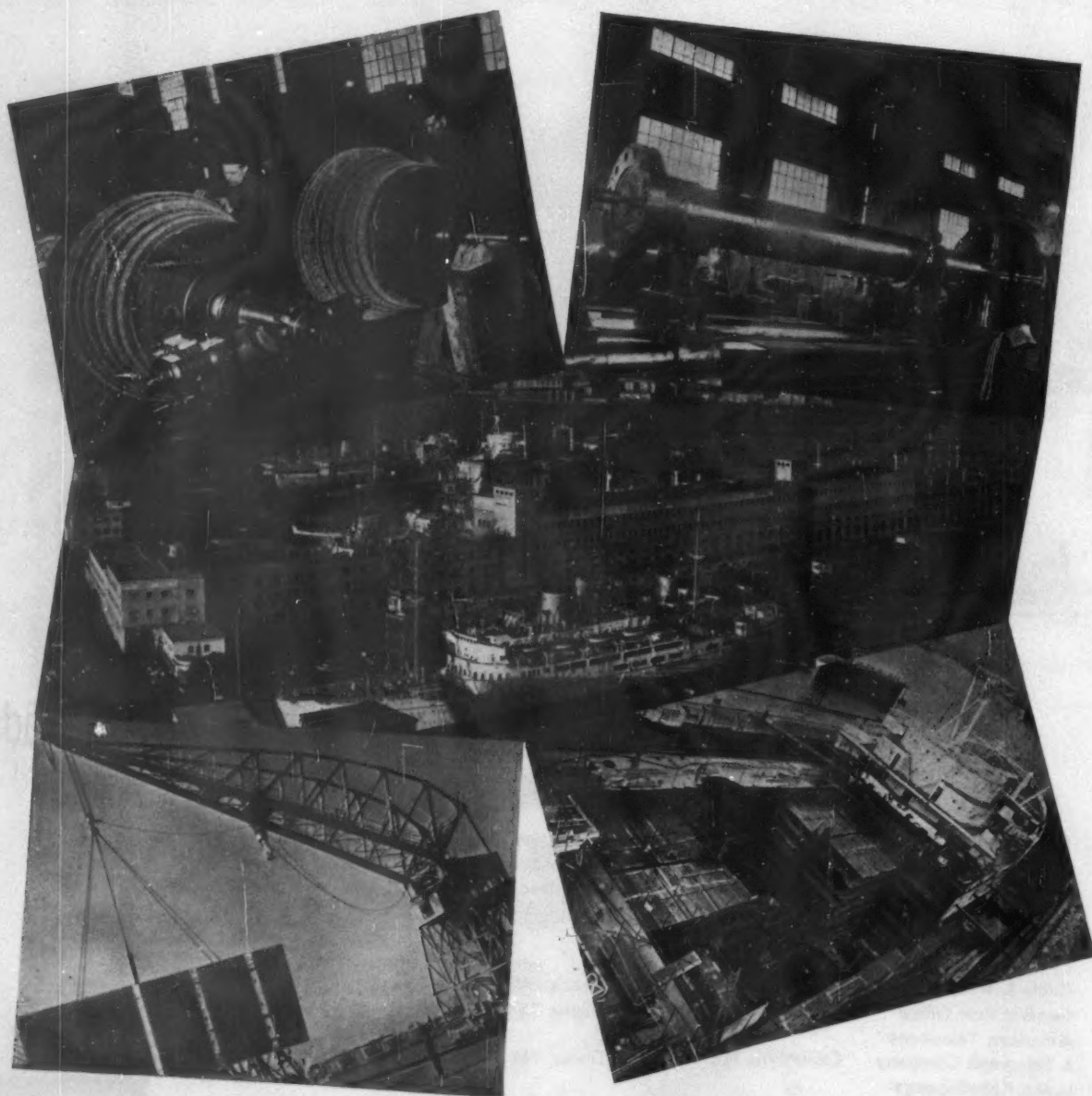
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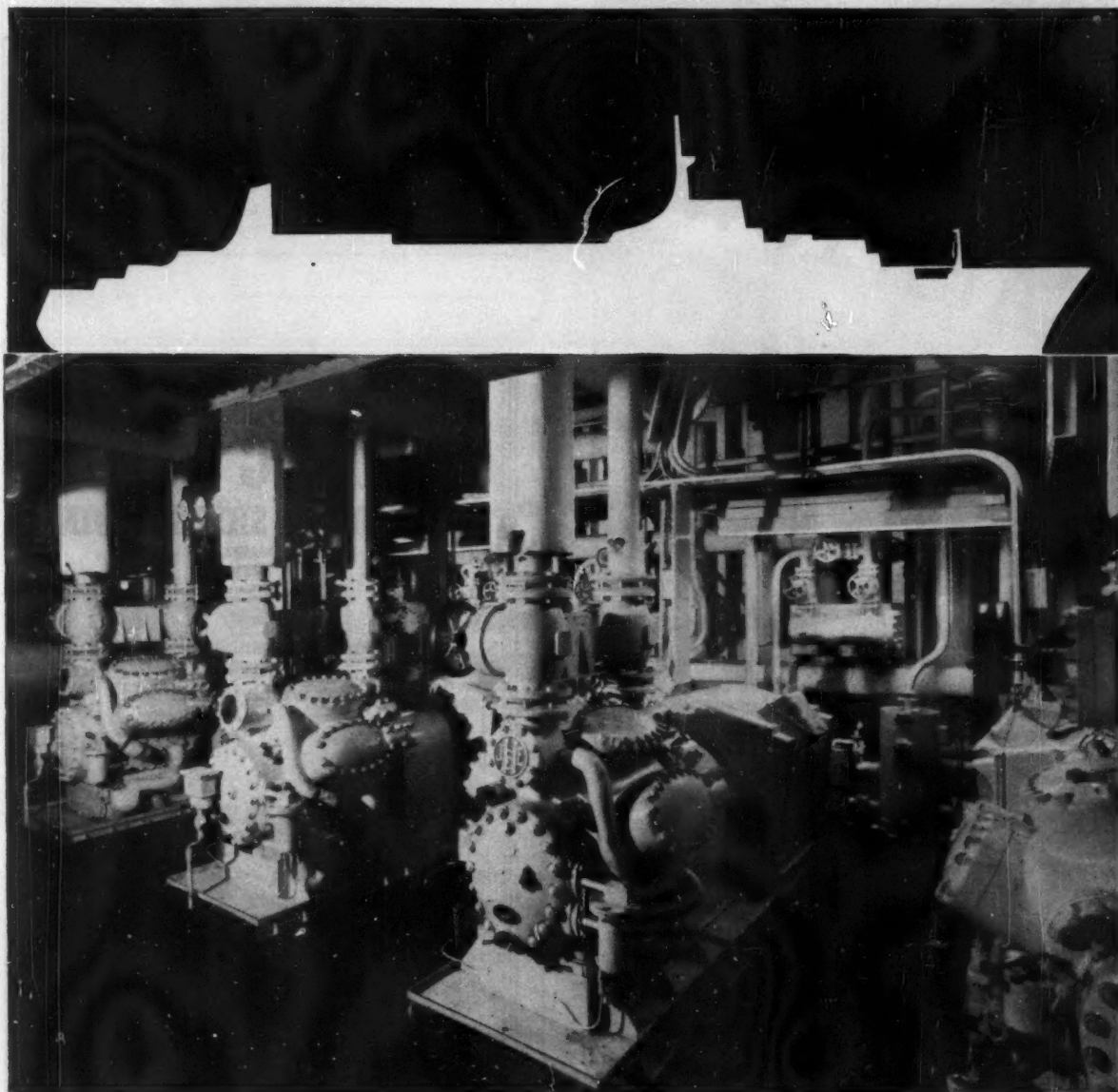
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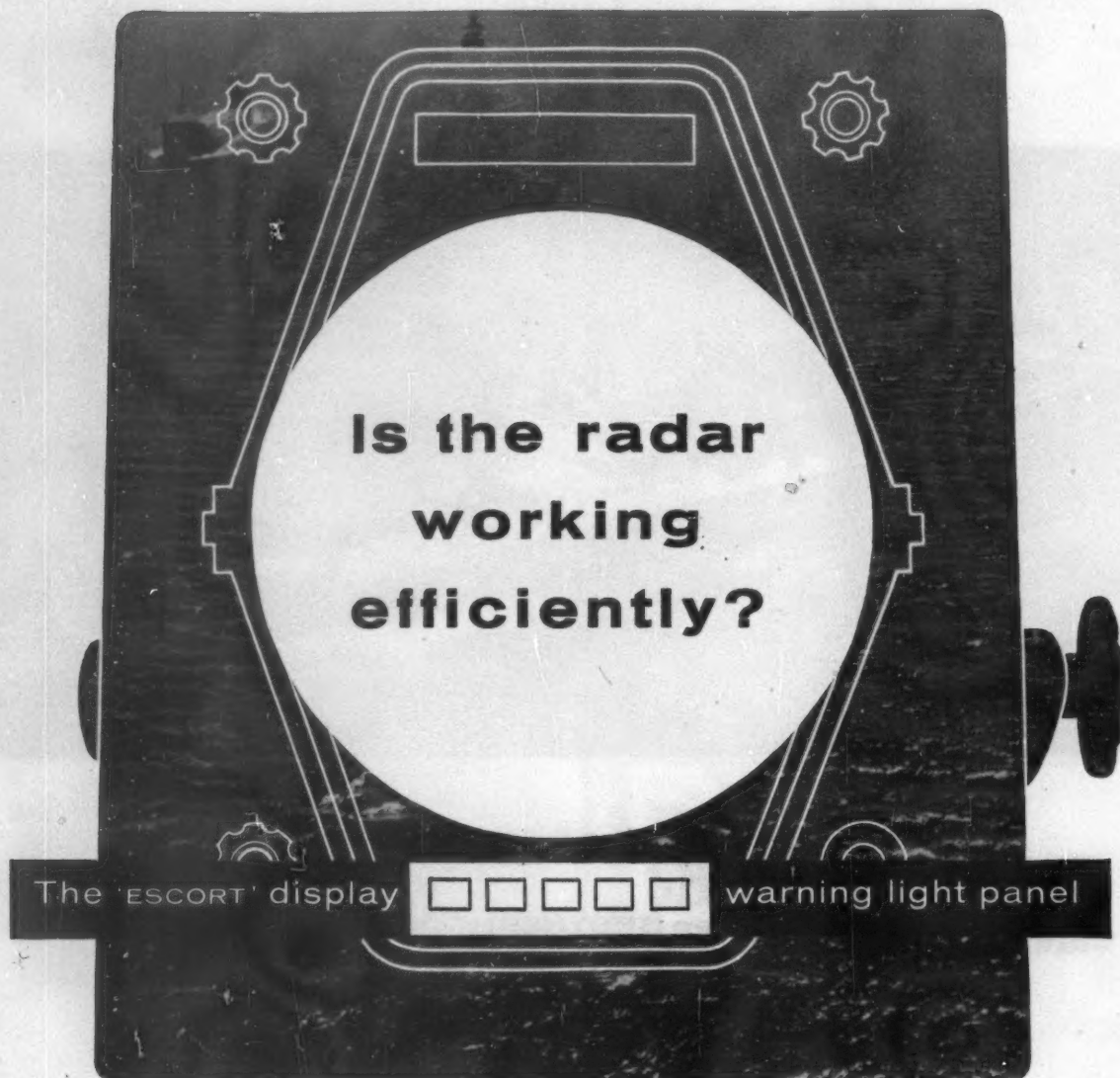


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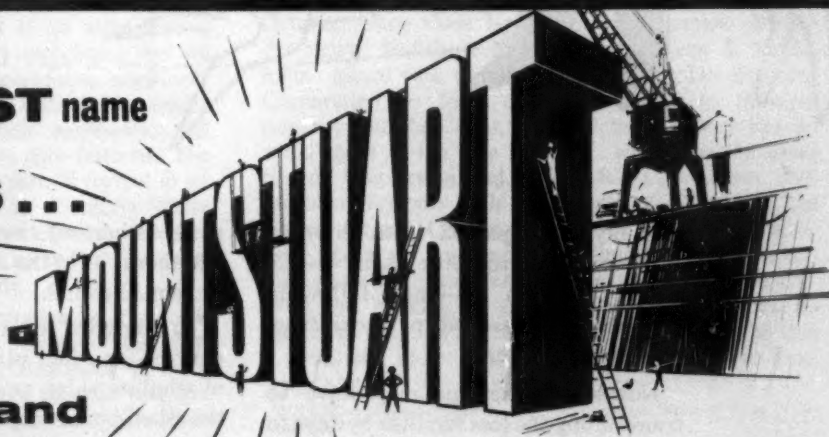
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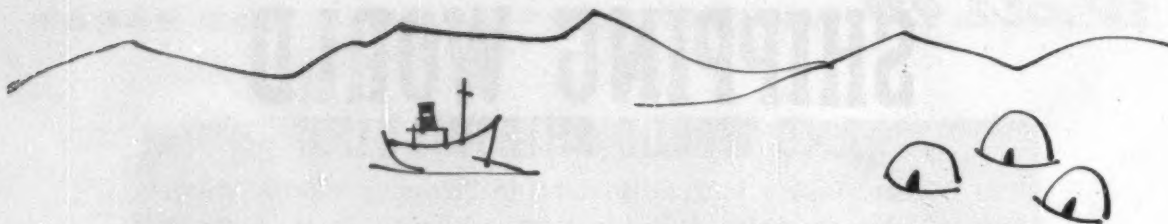
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Chief Engineers get off the beaten track



The days have passed when shipping companies had to route their vessels along the main sea-lanes, following resolutely the well-worn tracks from one port to another.

Nowadays Captains may have to tramp along the less familiar byways to pick up a waiting cargo, but they know that all over the world they will find ports with the most up-to-date bunkering facilities for ships of all sizes. Shell have provided this service in over 300

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Unbeaten tracks, in fact, hold no terrors today. Chief Engineers say that Shell have made them as familiar as the paths in their own back gardens.

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THE SHIPPING WORLD

THE FUTURE OF THE FUEL CELL

NUCLEAR POWER has held the centre of the stage for so long as the inevitable future source of propulsive power for ships that it is not easy to contemplate any alternative. But there is in fact an alternative, and it is one that, if development work over the next decade should prove satisfactory, might exclude the nuclear reactor largely or wholly from merchant fleets. This alternative is the fuel cell, which in view of its potentiality has received surprisingly little publicity in connection with ships, or indeed elsewhere. The fuel cell can be described as an electric accumulator in which the periodic recharging process is replaced by a continuous replacement of the materials expended. It converts fuel directly into electricity, and because it does this by a direct chemical process, and not by first turning the chemical energy into heat as is the case with all other systems for powering ships (including nuclear power) it has the potential ability to operate at about twice the efficiency of other systems.

This extremely high potential efficiency is an attractive feature of the fuel cell, but of greater importance still is the simplicity that it can bring. The propelling machinery of a ship could consist of no more than a battery of fuel cells, the necessary switchgear and an electric motor; while the auxiliary generating machinery could be just a further battery of cells. There would be no steam and no reciprocating machinery, and maintenance work would be drastically reduced. The whole principle of the fuel cell, in fact, is correct in an age where the emphasis must be on simplicity where possible and on reducing the number of men needed to man ships. That of nuclear power, by contrast, appears at present to be the exact opposite.

A good deal of technical information on fuel cells can be found in a paper read in March of this year to the N.E. Coast Institution of Engineers & Shipbuilders*. There are two main types of cell: one can run at normal room temperatures, but requires such

fuels as hydrogen; the other can use hydrocarbon fuels, but needs to run at a high temperature. These high-temperature cells are the ones showing most immediate promise, as cheap fuel is an obvious necessity. Work on them has been in progress in Great Britain since 1953, as well as in Holland, Germany and the United States. In the last of these countries fuel cells are being considered as a method of powering submarines. Despite the fact that the nuclear submarine has proved itself to the hilt, the idea of a submarine whose capabilities lie midway between those of the nuclear and the conventional battery-driven submarine are apparently attractive. This aspect of the use of fuel cells at sea was discussed in one of the papers read at the annual meeting last month of the Society of Naval Architects & Marine Engineers†, and the tone is optimistic.

Fuel cell research in Great Britain has been financed by various bodies, including the Central Electricity Authority (as it then was) and Shell. It has recently been sponsored by the National Research Development Corporation. The latest development occurred in October, when three large British companies—British Petroleum, British Ropes and Guest, Keen & Nettlefolds—joined with the National Research Development Corporation to form a new company to promote research into fuel cells. Each of the sponsors has an equal share in the new company, which has the name Energy Conversion Ltd. The N.R.D.C. also has reciprocal agreements with two American companies, the United Aircraft Corporation and the Leesona Corporation, which are working in this field, and these agreements are being transferred to Energy Conversion Ltd. With this backing, it can be expected that work on fuel cells will now accelerate, and it may well be that a good deal more will be heard of them before long.

* "Fuel Cells", by H. H. Chambers.

† "Current Electrical Systems and Equipment for Warships", by J. W. Thornbury.

Current Events

Competition from the Transport Commission

THE FEARS of the coastal shipping industry at the inadequacy of the present Clause 54 of the Transport Bill to protect it against unfair competition from the railways were well ventilated during the recent debate in the House of Commons; but at the meeting of the Council of the Chamber of Shipping last week consideration was given to the increasing extent to which the short-sea and near-Continental trades are suffering from competition from the British Transport Commission's shipping services. The danger here is that by adjustment of the rail

component of a through rate for the carriage of goods by sea between inland places in Britain and on the Continent, the Commission could quote through rates against which short-sea liner owners could not compete on a normal commercial basis. This danger might become even more pressing in view of Common Market prospects. With regard to the future of the British Transport Commission's ports, the industry had advocated the transfer of these to local autonomous trusts and would have liked the Transport Bill to have been more specific about this, but the Council of the Chamber accepted, in view of the

existence of the Rochdale Committee, the Minister's assurance that he regarded the port provisions as a "holding operation."

Shipping and Research

A GREATER appreciation of the importance and value of research in keeping with modern thought has been manifest in the shipping industry for some time, as witness the reorganisation of the shipbuilding research organisations to incorporate shipowners on to the governing body of the new British Ship Research Association. It is welcome news, therefore, to hear that the subject is being carried a stage further by the Chamber of Shipping. Speaking after the Council meeting last week the president, Mr W. Errington Keville, said that concurrently with the closer liaison with the shipbuilding industry in matters of research, the Council recognised that important tasks lie ahead insofar as shipowners themselves are concerned, and the question was being examined of whether the shipping industry itself was doing all that it should in its own field. He instanced, for example, the fields of cargo handling and of automation in ships. He thought that this sort of research might extend into the economic field, as has already been done by some of the larger shipping companies. A suitable subject of research in this area, for example, might be a study of the implications of the Common Market, for which purposes the Council has set up a special committee presided over by Sir Herbert McDavid. The Council also agreed that the many problems arising from the Channel tunnel or bridge proposals should be studied. Some useful preparatory work on these two subjects might well have already been available if the organisation now being considered was in being.

Passenger Ships for Sale

FURNESS WITTHY & Co are inviting offers for their passenger and cargo steamers *Nova Scotia* and *Newfoundland*, which have been maintaining a regular service from Liverpool to St John's, Halifax and Boston since 1948. The owners have decided to dispose of the ships following a substantial reduction in the number of passengers using the route, but they have stressed that the demands for cargo space are such that they are increasing the frequency of their cargo service, with ships carrying 12 passengers. Another disposal of a passenger vessel—although of rather a different type—has been announced by the Bibby Line. They have placed the troopship *Devonshire* in the hands of brokers, and she is being offered for sale. The company had been informed by the Ministry of Transport, which has the ship on charter, that owing to the changing needs of the armed forces she would no longer be needed, and that consequently the charter would be terminated before its expiry date. The *Devonshire* will be returned to her owners early in the New Year. She has been in continuous service as a troopship since she was completed in 1939, having been built by the Fairfield Shipbuilding & Engineering Co Ltd to the specific requirements of the Sea Transport Department. What the future of the *Devonshire* will be is of course at this stage rather a moot point. No doubt the brokers concerned will be looking for trading buyers, but bearing in mind that she is a troopship the amount of conversion work involved to fit her for ordinary passenger carrying work may be considerable. On the other hand she might well be more suitable for use as a pilgrim ship, and it will be recalled that earlier Bibby Line troopships have been sold for such purposes. However, there is already a pilgrim ship being offered for sale, the *Gunung Djati*, owned by the Blue Funnel Line and laid up at Singapore. In these circumstances it may well be

that the *Devonshire* will eventually end her days being sold for demolition. The *Worcestershire* is at present on her way to a Japanese shipbreaking yard under the name *Kannon Maru*. This sale to Japanese shipbreakers was arranged in July at a price of £145,500 and the ship was handed over some weeks ago at Liverpool.

Analysing Ship Costs

MR P. DENHOLM CHRISTIE, executive director of Swan, Hunter & Wigham Richardson Ltd, gave an address to the Marine Discussion Group of the Insurance Institute of London last week which combined a light and humorous touch with a good deal of sound sense. In discussing the cost of ships he emphasised the fact—well known but worth repeating—that the larger part of the cost of a ship lies outside the control of the shipbuilder who is building it. He put the proportions at from 60 to 66 per cent of costs beyond the shipbuilder's control, and 33 to 40 per cent within his control. He also listed both categories under headings. Under the first came steel, the price of which is fixed by the steelmakers; other purchased materials and equipment, the only measure of control being competitive tender; carriage and freight; tug hire; stationery, postage and telephones; rent and rates; and National Insurance contributions. The second category comprised labour (direct, indirect and maintenance), though he pointed out that in recent years a certain amount of Government pressure has been applied over national negotiations; yard management and foremen; directors' remuneration; administrative salaries; staff and voluntary pension schemes; depreciation of fixed assets; subscriptions and donations, Christmas bonus etc; welfare, luncheon room, travelling and entertainment expenses, and advertising. From such a list, a variety of conclusions could no doubt be drawn. One that is obvious is the predominance of labour costs among the direct expenses, and therefore the great importance of obtaining the most economical use of labour.

Planning the Specification

MR DENHOLM CHRISTIE also had some pertinent words to say about the habits of shipowners when ordering ships. He pointed out that there are many shipowners who are themselves commercial rather than technical by experience, and whose business is managed on the technical side by superintendents who are faithful servants of the company, but set in their ways. He sketched out the train of events that might occur when such a company decided to order a new ship. It would ask for designs for a ship quoting two alternative deadweights, three alternative speeds and two alternative types of machinery, thus involving each builder asked to quote in 12 different designs. The superintendents then ask for all sorts of extras not in the original design, and as many of these ideas come up late in the building they cause delays and late ordering of materials, with the final result that the ship costs more than she should have done or need have done. This picture is perhaps a little cynical; but it clearly derives from a cynicism born of experience. A point which was brought up in the D.S.I.R. report, and has been brought up again since, is that shipowners could in many cases benefit from the use of qualified consultants. This may be taken as a plea for such a course from the other side of the fence.

Compulsory Passengers

BETWEEN January 1 and June 30 next year the United States Air Force is to transport about 10,000 airmen and their dependents overseas by commercial shipping lines, instead of by air. This follows the institution of a new policy brought about by Congressional criticism of the

failure of Service departments to use commercial shipping for this type of transportation. As a result, these departments are planning to spend a total of \$7½ mn in the present financial year on shipping. Until now, airmen and their families transported overseas, or returning to the United States, had to travel by air, unless in individual cases the medical authorities advised otherwise. Now the choice between sea and air transport is voluntary, but if the Air Force finds that the month's commitment for sea travel is not being met, it may direct family groups to go by sea. Normally about 4,000 US airmen and their families travel by sea each year, which is about 1 or 2 per cent of the total involved. This will be increased to 12 per cent as a result of the US Air Force being committed to spend \$3 mn in the financial year on moving airmen and dependents overseas by commercial shipping. Because of the present ban on moving Service families to Europe, most of the transportation will be for use in the Pacific area.

Unification of Tonnage Measurement

THE Sub-Committee on Tonnage Measurement of IMCO is meeting in London this week. Classification societies and some non-governmental international organisations, such as the International Chamber of Shipping and the International Shipping Federation will be represented by observers. The first meeting, which took place in June 1959 was largely of a preliminary nature. The work programme called on the sub-committee: (a) to examine the present uses of tonnage measurement, (b) to determine the basic features for a satisfactory universal system of tonnage measurement, and (c) to consider whether a satisfactory system of tonnage measurement might be achieved by giving equal consideration to modification of the existing rules and to the introduction of a new system. Information on the uses of tonnage measurement has since been assembled on a worldwide basis. The sub-committee will have before it a number of proposals put forward to certain member countries (Denmark, Germany, Italy, U.S.S.R., U.K. and U.S.A.) with a view to consideration of the possibility of adopting a satisfactory universal system. Some of them are based on a modification of the existing rules, and some envisage an entirely new approach to the problem.

Diamond Jubilee of Trans-Atlantic Radio

SIXTY years ago Guglielmo Marconi became the first to send a wireless signal across the Atlantic. This remarkable achievement with such primitive equipment marked the birth of worldwide radio communications. During the spring of 1900, Marconi had succeeded in sending reliable signals from St Catherines in the Isle of Wight to The Lizard in Cornwall, a distance of 186 miles. This encouraged his belief that by using larger aerials and far more powerful transmitters he would be able to achieve trans-Atlantic distances. Shipping companies had shown mild interest, but very little enthusiasm for the idea of installing wireless equipment in their ships. Scientists were highly sceptical; many said it was impossible because of the curvature of the earth. Marconi determined to make the attempt. A transmitting station nearly 100 times more powerful than any previously was built at Poldhu in Cornwall. Enormous aerials were erected at Poldhu and at Cape Cod in Massachusetts, but both were wrecked in severe gales. Another, less ambitious in design, was put up at Poldhu while Marconi and his two assistants sailed to Newfoundland where, from the top of Signal Hill, a receiving aerial was hoisted, at the third attempt, by means of a kite. At 12.30 p.m. (Newfoundland time) on 12 December 1901, Marconi and his assistant

G. S. Kemp, using one of the primitive receivers of the period with a telephone earpiece, heard a faint succession of S's in Morse code. Signals from Poldhu, 2,200 miles away, had crossed the Atlantic. Two months later tests were carried out between Poldhu and the liner *Philadelphia* en route to New York in which signals were received at a distance of 2,099 miles out to sea. To commemorate this historic achievement, a special exhibition is being shown at the Science Museum, South Kensington, until January 25.

The "Free Flow" System

To The Editor of THE SHIPPING WORLD

SIR,—In your issue of November 29 you published a very fine article on the 51,000-dwt oil tanker *Sirius* for the Compagnie Navale des Pétroles. As our organisation, as you mentioned, is marketing the Free-Flow system throughout the world, we would like to congratulate you for this paper.

On this occasion we would like to point out that there is some kind of misinterpretation in the second part of the first paragraph of page 421. Instead of "The reason for there being . . ." one should read: "The reason for there being so few main tanks is probably because it is not intended to carry more than two types of cargo at a time, although more than two types of oil can be carried if necessary. This has allowed openings about 20 per cent to be cut in every other transverse bulkhead."

The figure you mentioned of 25.4m is the distance between watertight bulkheads.

Yours etc,

J. J. WORTH,

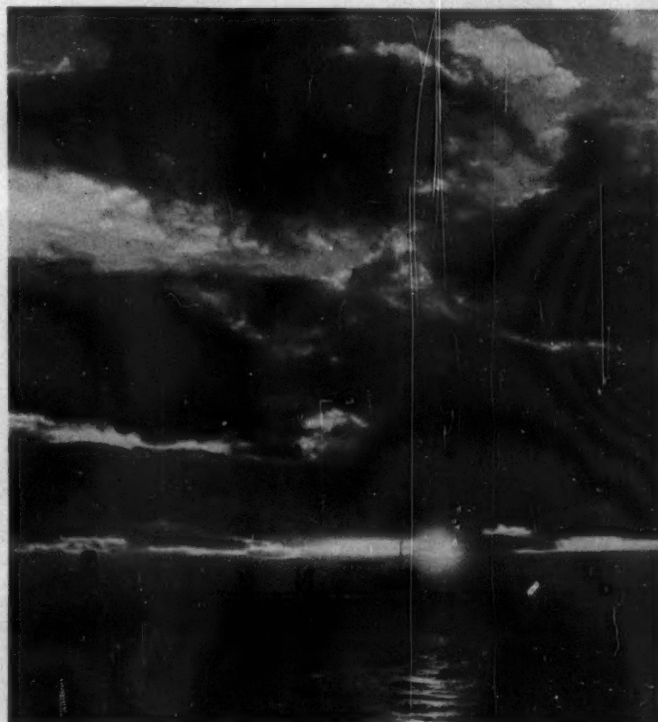
Tanker Division, MacGregor-Comarain S.A.

96 bis Rue de Ranelagh,

Paris 16.

6 December 1961.

Sunset at Milford Haven with the tanker "Esso Pembrokehire", 77,000 dwt, at anchor. An article on the ship starts on page 463



ON THE "BALTIC"

WILL THE WEAKENING TENDENCY PERSIST?

By BALTRADER

JUDGING from the way in which rates have declined on most markets in recent weeks, many owners are determined that they will have no early ships on their hands by the time they return to their homes on Christmas Eve. With this in mind, December vessels have been offered with gay abandon at ever decreasing rates, and although no one can deny that prompt ships on a falling market over a holiday period can be a grave embarrassment, one is nevertheless tempted to wonder whether in some directions more concerted efforts on the part of owners would not have slowed down the decline. As lower rates have been established a lot of new business has emerged and, although there still seem to be plenty of ships available in most areas, the present weakening tendency could be reversed at any time, especially after the holidays, when what are usually some of the best months on the freight markets lie ahead.

In the meantime it is worth glancing at a few of the rates in the main trades today and comparing them with those current before the decline in, say, mid-October, and then again with rates paid for similar business in early December 1959 and 1960. Scrap, for example, from the U.S. Gulf to Japan had fallen last week from its October level of \$140,000 to \$126,000, but in December 1960 it was \$103,000, and the year before \$107,000. The grain rate from the U.S. Gulf to Japan fell from \$11.50 in October to \$10.25 last week, and the December 1960 and December 1959 levels were about \$9.75. Trans-Atlantic grain rates are less easy to compare and in any case show smaller variations, but approximate comparisons from the U.S. Gulf to the U.K. are—October this year 62s 6d, last week 50s, December 1960 55s and December 1959 56s 6d. In the Far East the rate for copra from the Philippines to Antwerp-Hamburg range has remained depressed for months, and 15¼ cents per cubic foot bale gives a fair indication of the ruling rate in both October this year and last week. In December 1960, however, 18½ cents was the current level and twelve months before that about 18 cents. Bulk wheat from Eastern States Australia to the U.K. is another trade which goes on year after year and, like copra, there was no real change from the October level of 87s 6d to the rate current last week. In December 1960 owners were being paid about 90s for similar business, but a year before, the current level was 100s.

Higher Outward Rates to Far East

It is clear, therefore, that in spite of recent setbacks, freight rates out to the Far East are generally higher than they have been at this time in the past two winters, but homeward rates from the East are lower. In view of the poor return prospects, it is perhaps surprising that charterers have succeeded in reducing eastward rates at all, but several of the ships taking lower rates from the U.S. Gulf and U.S.N.H. to Japan were, in fact, ballasters from the Far East, and in any case it has often been difficult for an owner with a ship in European waters to find business which would keep the vessel employed on this side.

Nevertheless, there has been sufficient trans-Atlantic grain business to keep a fair number of ships occupied although, in line with the general trend, rates have steadily declined. Grain-carrying tankers have also had to take lower rates, and the U.S. Gulf to near-Continent voyage, for example, is worth at least 75 cents less than the rate current in the early autumn this year. A trade which continues to attract Liberty-type and other war-built oil-

burners is that with sugar from Cuba to the Black Sea, and recently fixtures have been concluded for loading as far ahead as next February/March, but here again there has been at least a small rate reduction. Small open shelterdeck motorships are still freely available on this side of the world, and their owners waste no time in offering for any suitable timecharter orders which are quoted. In the circumstances liner operators can afford to be selective, and they demonstrate this by fixing not only ships of exactly the type they require, but also with very close dates. This sometimes involves the owner in a wait of several days before delivery, a practice he would resist most strongly on a firm market.

BOOK REVIEWS

British Shipping Laws. (A series of 14 volumes published by Stevens & Sons Ltd, 11 New Fetter Lane, London EC4.)

Three volumes of a new encyclopedic series have now been published by Stevens & Sons Ltd. When completed this series will for all practical purposes cover the whole of British shipping law in all its branches from average to insurance and from carriage to salvage. The series is under the general editorship of Mr Justice Hewson, and each volume is prepared or edited by chosen specialists. The first to appear is Volume 4, which is in effect the eleventh edition of Marsden's *Collisions at Sea* (price £9 9s), which incorporates considerable changes in Admiralty law since the previous edition was published in 1953. The new edition also incorporates Roscoe's *Measure of Damages*. Volumes 9 and 10 (price £12 12s) are in effect the fifteenth edition of Arnould's *Marine Insurance and Average*, edited by Lord Chorley and C. T. Bailhache. The volumes are available separately, but a saving of at least 15 per cent of the published price of each volume can be obtained by ordering the whole series at once.

North Atlantic Liners 1899-1913 by Laurence Dunn. (Hugh Evelyn Ltd, 9 Fitzroy Square, London W1. Price 84s.)

This is one of the most unusual volumes both in size and contents to appear for a long time. Its size of 19in by 9in will place it in that class of book that has to be put in a cupboard instead of a bookcase. However, as a book it is extremely well produced and will no doubt become a collectors piece. The 38 pages contain detailed profile drawings in colour of 12 ships of the period. Each drawing is about 15in long and is a real work of art. Facing each drawing are comprehensive notes on the career of each particular ship. The vessels shown are *Oceanic*, *Saxonia*, *Kaiser Wilhelm II*, *Virginian*, *Empress of Britain*, *Nieuw Amsterdam*, *Mauretania*, *President Grant*, *Olympic*, *France*, *Bergensfjord* and *Imperator*.

Atlantic Highway by Warren Armstrong. (George G. Harrap & Co Ltd, 182 High Holborn, London WC1. Price 21s.)

Atlantic Highway is a most ambitious work covering, as the title suggests, the history of the North Atlantic passenger trade from the sailing of the *Royal William* to the present *France*. The author, however, does not simply confine himself to shipping, but includes the history of trans-Atlantic air travel, dirigibles, hovercraft and even special voyages by yachts and other small craft. These last chapters are of particular interest as there are very few, if any, books covering these subjects. It is written in a style that makes for easy reading. There are 45 well-reproduced illustrations, some of which have rarely, if ever, been used before.

The Mark of Safety by Agnes Ashton. (The Epworth Press, Epworth House, 25-35 City Road, London EC1. Price 10s 6d.)

This book deals with the effect that Samuel Plimsoll had on the safety of life at sea and in particular of the load line regulations and Plimsoll Mark. The book is written in dialogue form. A good novel but perhaps a little too dramatic.

NEWS FROM OVERSEAS

From THE SHIPPING WORLD'S Own Correspondents

B & W Licensing Change

THE Hitachi Shipbuilding & Engineering Co Ltd has received formal Japanese Government approval for a direct licensing agreement with Burmeister & Wain for the manufacture of B & W diesel engines in Japan and their sale in Japan, Korea, Okinawa and Taiwan. The agreement is for ten years and is due to expire on 21 November 1971. Its terms include a royalty of \$3 per bhp, with the exception of Alpha-type engines for which a royalty of \$2.50 will be paid by Hitachi. The new agreement replaces one just expired under which Hitachi was a sub-licensee of the Mitsui Shipbuilding & Engineering Co Ltd. Since 1950, the company has manufactured 141 main B & W diesel engines totalling 769,620 bhp and 229 auxiliary engines totalling 70,675 bhp under that agreement. Among them was a 15,000-bhp engine built in 1957, the world's most powerful diesel marine engine at the time, which was installed in the 35,500-dwt Japanese tanker *Yuyo Maru No 5*. Hitachi had an order backlog of 63 diesel engines totalling 132,580 bhp on November 20.

Need for Large Berths

IN A REPORT entitled "The Present Situation of the Shipbuilding Industry and Plans for the Future", the Japanese Ministry of Transportation draws attention to the increasing size of vessels ordered and suggests that

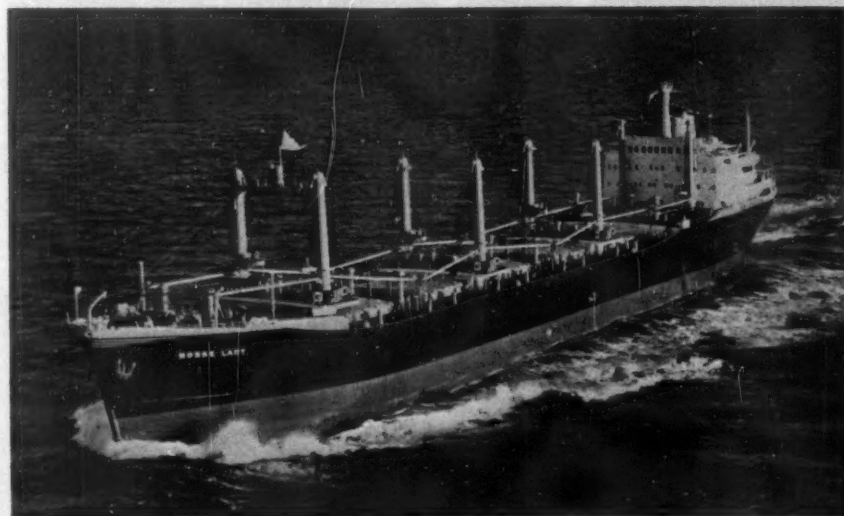
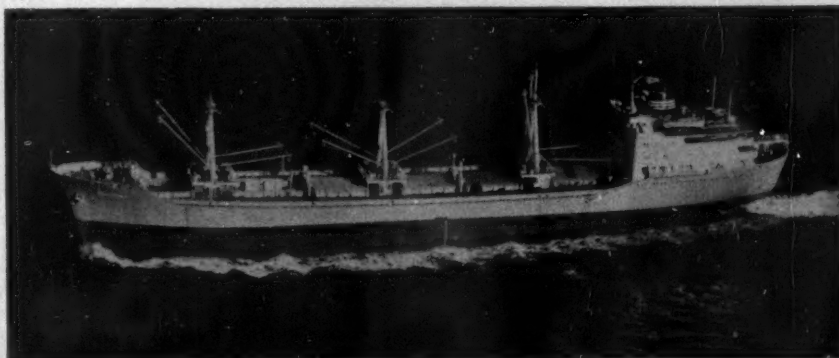
the number of berths capable of building such ships should be increased by 1962, when the need for them will be greater even than now. The Ministry lists 68 berths at 27 shipyards on which ships of over 6,500 dwt can be built. On 14 of these berths ships of over 65,000 dwt can be built, and two of the yards can build ships of over 100,000 dwt. The report shows that the 24 leading yards had an order backlog of 1,530,000 grt in export vessels and 540,000 grt in domestic vessels at the end of September. The latter figure did not include the tonnage to be built under the 17th government programme. It was pointed out that 90 per cent of the backlog was held by yards capable of building vessels of over 30,000 dwt. Orders placed in the April-October period totalled 1,060,000 grt, of which 530,000 grt were for export.

World's Biggest Propeller

THE Nagasaki works of the Mitsubishi S. & E. Co Ltd has begun casting what is claimed to be the world's biggest propeller. With a diameter of 7.5m and weighing 35.75 tons, the propeller is to be installed in the 130,050-dwt tanker under construction by the Sasebo Heavy Industries Co Ltd for the Idemitsu Kosan K.K. It is five-bladed and of nickel-aluminium-bronze alloy. The company said that a reduction of about 8 per cent in the thickness of the blades and of 15 per cent in total weight was

RECENT SCANDINAVIAN TONNAGE

The 13,250-dwt cargo ship "Nordvind" has been completed at the A/S Bergens Mekaniske Verksteder for H. Kuhnles Rederi A/S, Bergen. The vessel's cargo space is divided into six holds with a total capacity of 630,900 cu ft. The propelling machinery consists of an Akers-B & W nine-cylinder diesel engine having a continuous output of 6,090 bhp at 145 rpm. The "Nordvind" attained a speed of 17.07 knots on trials



The "Norse Lady" is the second in a series of five 18,000-dwt bulk carriers to be built by Uddevalvarvet A/B, Sweden, for Norwegian owners. The owner in this instance is Rederiselskapet Norse Lady v/Odd Godager & Co, Oslo. The main characteristics are length o.a. 555ft 1/2 in, breadth moulded 70ft depth moulded 41ft 3 in, and draught 30ft 1 1/2 in. The vessel is all-welded and has been strengthened for navigation in ice and also for carrying heavy cargo. The total capacity of the seven cargo holds is 857,000 cu ft. The vessel has been specially equipped for the carriage of cars. In the cargo holds there are car decks which can be stowed away under the deck when carrying other cargo; the total number of Volkswagen cars which can be loaded is 1,250

possible by the use of this alloy instead of manganese bronze. The alloy is also said to have superior anti-corrosion properties.

Freight Rate Increase

THE Japan-Puerto Rico-Virgin Islands Freight Conference announced that an increase of 10 per cent in its rates for most items will become effective on 1 February 1962. The Japan-Atlantic and Gulf Freight Conference and the Trans-Pacific Freight Conference of Japan have granted membership to the Magsaysay Line, of the Philippines, which plans to start regular services between the Philippines and both coasts of the United States next April. The line's application for membership in the Japan-Latin America Eastbound Freight Conference was rejected.

American Merger Approved

THE Federal Maritime Commission on November 28 approved a long-pending plan to combine the liner services of the Isbrandtsen Company and American Export Lines. The proposal, which has been one of the most controversial issues in the American steamship field, has been under government scrutiny for the past year, ever since Isbrandtsen acquired control of American Export by purchasing \$316,000,000-worth of its shares, or 26 per cent. It was then announced that the Isbrandtsen fleet of 14 cargo liners engaged in round-the-world service would be transferred to a subsidiary, Isbrandtsen Steamship Co., and sold to American Export, in effect merging it with the latter's 24-ship fleet of cargo liners plying to the Mediterranean. At the time—and still—American Export held an operating-differential subsidy contract with the Government, while Isbrandtsen did not. It was noted, however, that Isbrandtsen had applied and become eligible for such a subsidy. The fleet-combination plan was vehemently opposed by the Prudential Steamship Corporation, a subsidised operator of five cargo vessels in the Mediterranean trade, which asserted that it would be driven out of business by the creation of this 38-ship "octopus". The approval now granted will become effective in 15 days unless exceptions are filed.

Maritime Commission Appointments

MR THOMAS E. STAKEM, chairman of the Federal Maritime Commission, recently created under a Presidential reorganisation plan, has announced the appointment of Mr Elmer E. Metz as the Commission's executive director, Mr James L. Pimper as its general counsel, and Mr Myer Trupp as head of its Office of Public Information. Mr Metz was formerly Acting Deputy Maritime Administrator; Mr Pimper, general counsel of the old Maritime Administration and more recently acting chairman of the Commission; and Mr Trupp, Public Information Officer of the former Federal Maritime Board and Maritime Administration.

Fuelling the "Savannah"

CREWS of the New York Shipbuilding Corporation on November 27 began the task of loading 17,000 pounds of uranium oxide fuel into the reactor of the nuclear ship *Savannah*. While loading of the fuel (enough to provide 3½ years' continuous operation) is expected to take less than a week, the Atomic Energy Commission reports that certain tests recommended by its Licensing and Regulation Division will consume about 30 days more. Also in the nuclear field, the Maine Maritime Academy, one of four state institutions which supplement the work of the U.S. Merchant Marine Academy in training merchant ship officers, has applied to the Government for \$51,000 to expand its atomic propulsion training facilities.

Sulzer-Type Diesels for Russian Tankers

THE FIRST two Mitsubishi-Hiroshima-Sulzer large-bore diesels of nine cylinders and 18,000 bhp maximum output will be installed in the 35,000-dwt tanker *Lugansk* and a sister ship on order at the yard for Russia. The main particulars of these engines were given as follows: cylinder bore, 900mm; stroke, 1,550mm; mean effective indicated pressure, 7.67 kg/cm²; maximum pressure in cylinder, 69 kg/cm²; average piston speed, 6.15 m/s; length o.a., 19,170mm; bed-plate breadth, 4,000mm; height, 9,570mm; gross weight, 730,000 kg.

Polish Register of Shipping

THE Polish Register of Shipping was set up in 1946, and it has thus been in existence for 15 years. A booklet in English has been produced to mark the occasion, this consisting of translation of articles which appeared originally in the Polish shipbuilding journal *Budownictwo Okretowe*. It is only in the last few years that the Polish Register of Shipping has played a major part in classification work in the field of shipbuilding. For the first ten years of its life it surveyed only inland and harbour craft and small seagoing fishing boats. Then in 1956 agreements were signed with Norske Veritas and the Russian classification society, and these were the beginning of the Register's advance into the field of oceangoing shipping. In 1956, 4 per cent of Polish shipbuilding production was to the classification of Polish Register of Shipping. In 1957 this figure rose to 22 per cent, and subsequently it has been about 50 per cent. In 1961 it is expected that it will have risen to 65 per cent. Overseas representation of the Register is largely undertaken by Norske Veritas, which acts for it in the majority of countries outside the Communist bloc.

New Polish Trans-Atlantic Liner ?

NO DECISION has yet been taken on the question of building a new passenger liner to replace the Polish *Batory*, which is already 25 years old and will be withdrawn from service in a few years. The *Batory*, a vessel of 14,287 grt, is running on the route Gdynia-Copenhagen-Southampton-Montreal, and an early decision is needed in Poland if a replacement is to be ready in time. There is a strong feeling in the country that it is desirable to continue the maintenance of a passenger service on the route—the more so on account of the steadily growing movement of tourists to Poland from the U.S.A., where there are about five million Americans of Polish descent. The central design office of the Polish shipbuilding industry has already worked out a draft design for a vessel of 23,000 grt with a speed of 23 knots and accommodation for 800 passengers, but it is possible that Polish Ocean Lines, which runs the *Batory*, will decide on a rather smaller ship. If the ship is finally built, either its hull and engines will be built in Poland with the work of outfitting done abroad, or the whole of the work will be done in Poland with assistance from a foreign shipyard.

In Brief

PUSNES MEK. VERKSTED, near Arendal, one of the oldest and best established Norwegian shipbuilding yards in the past, decided a couple of years ago to terminate its shipbuilding activities and instead concentrate all its forces on the building of deck machinery, in which the firm had gained considerable experience. The decision proved a wise one. Today the firm is fully booked for almost the whole of 1962, and only a few orders for delivery in the autumn of next year can still be taken.

THE Norwegian port of Bodø, 50 miles north of the Arctic Circle, is now connected up with the country's railway lines.

On the great
sea routes
of the world
ships are
bunkered by



*Caltex bunker oil facilities,
lubrication and technical services
are available at all
the principal ports on the great
sea routes of the world.*

S.S. Caledonian Princess



This Fine Denny Built Ship will go into service with the

Denny-Brown-AEG Stabiliser

This Equipment embodies the latest techniques in Ship Stabiliser Design, and is the first production model incorporating the design advances resulting from the close collaboration of the British and German Companies

Brown Brothers & Company Ltd. Edinburgh

William Denny & Brothers Ltd., Dumbarton

Allgemeine Elektrizitäts Gesellschaft, Hamburg

Deutsche Werft Akt., Hamburg

Control Gear by Muirhead & Co. Ltd., Beckenham, Kent

**All moving parts sealed in an oil-tight casing
Less athwartship space used
Simpler Installation
Rotary Vane drive of the fin**

**All enquiries should be sent to:
Brown Brothers & Company Limited,
Rosebank Ironworks, Edinburgh, 7.**

**Allgemeine Elektrizitäts Gesellschaft,
Schiffbau, Steinhof 9, Hamburg II, Germany**



New Passenger and Vehicle Ferry

THE "CALEDONIAN PRINCESS" ENTERS THE LARNE/STRANRAER SERVICE

A THIRD vessel has joined the two passenger and vehicle ferries now running between Larne in Northern Ireland and Stranraer in Wigtownshire, Scotland. This vessel, the *Caledonian Princess*, 3,600 grt, has been specially designed and constructed by William Denny & Brothers Ltd for the Caledonian Steam Packet Co (Irish Services) Ltd. With the entry of this new ship into service, a twice-daily service will now operate in each direction; which means that road hauliers and motorists can drive on at Stranraer and drive off two hours later at Larne, and can return the same day to Scotland.

The *Caledonian Princess* is a twin-screw vessel capable of carrying 1,400 passengers and a crew of 77. She is powered by steam turbines and has a bow lateral-thrust unit and Denny-Brown stabilisers of the latest design. (These are described in an article on a later page.) Motor cars, trailers and coaches are carried on the main deck, and are loaded and discharged through a watertight stern door. Garage space is available for about 103 motor cars or 29 trailers and 53 motor cars. A 22-ft turntable capable of carrying motor coaches and for turning loads up to 24 tons in weight is fitted on the after end of the main deck.

The principal particulars of the *Caledonian Princess* are as follows:—

Length o.a.	353ft
Length b.p.	331ft
Length on waterline	340ft
Breadth moulded at main deck	55ft
Breadth over beltings	57ft 2in
Depth moulded to main deck	17ft 6in
Draught, mean loaded	12ft
Deadweight	620 tons
Gross tonnage	3,600 tons
Machinery output	11,500 shp
Speed	20½ knots
Passengers carried:	
First class	400
Second class	1,000

The *Caledonian Princess* has two complete decks, namely the main and promenade deck; there is also an upper deck above the main deck, a lower deck forward and aft, a boat deck and a navigating bridge forward.

Motor cars are carried on the main deck where provision has been made on either side for the stowage of 40 motor cycles and cycles.

A bow lateral thrust unit in the form of a cycloidal type electric motor-driven propeller of Voith Schneider design, constructed by Brown Bros & Co Ltd, Edinburgh, has been fitted at the fore end of vessel. This device has a side thrust of 4 tons. The bow steering gear is of Brown-A.E.G. type, controlled by an A.E.G. electric control system, providing normal and emergency push-button control.

The after steering gear has also been supplied by Brown Bros & Co Ltd, and is of A.E.G. type. It works the twin stern rudders and is controlled by an A.E.G. electric system, providing follow-up and emergency push-button control and consisting of a steering column, having two built-in rudder angle indicators mounted at the navigation position.

Accommodation has been provided for about 1,400 passengers, 400 first-class and 1,000 second-class, and a crew of 77, and includes sleeping cabins for 82 first-class passengers in one and two-berth cabins and in two cabins-de-luxe, and 94 second-class passengers in two and four-berth cabins. The public rooms which have been decorated and furnished to modern standards and requirements,



One of the Denny-Brown-A.E.G. stabilisers in the housed position

comprise lounges, smoke-rooms and bars, ladies' rest rooms, restaurant and cafeteria.

In order to provide a certain cohesion in this variety of spaces all first-class stairways and entrances have been treated similarly with Warerite, Mezzola (slate) panelling in entrances and staircases panelled in Decorplast Emblem (alabaster), floor coverings being in various arrangements of mottled black and bracken brown with white painted balusters and teak handrails with matching teak trims to door openings.

The main galley and pantry spaces, equipped with the latest type of electrical cooking appliances, are conveniently arranged on the upper deck forward, and provide a quick service of hot and cold meals to the second-class cafeteria and first-class dining room. Stewards' pantries are provided on the lower deck for serving the first and second class passenger cabins. The galley and pantry equipment, furnishings etc were supplied by Thomas Bishop Ltd and W. M. Still & Sons, the refrigerator cabinets being supplied by the Lightfoot Refrigeration Co Ltd. An electrically-operated service lift supplied by the Otis Elevator Co Ltd is provided between the stewards' store, vehicle deck, main galley and officers' pantry.



First-class smoke room on the promenade deck. This room has leather upholstered seats and red and white plastic top tables



LEFT: The first-class lounge on the boat deck has seating for 77 people



Special arrangements have been made to safeguard the vessel against the possible outbreak and spread of fire and the arrangements fitted include incombustible bulk-head linings throughout in addition to sprinklers. Incombustible linings, bulkheads and ceilings of Marinite faced with Novon or with wood, or Marinite with stressed face, have been used throughout the accommodation. The "Grinnell" automatic sprinkler and fire alarm system by Mather & Platt Ltd is installed throughout all accommodation spaces for passengers and crew, public rooms, garage spaces etc, and is also provided with Fire Brigade shore hydrant connections which ensure a direct water service into the sprinkler equipment when required. The piping system is permanently charged with fresh water and each section is fitted with a control valve and connected to an automatic electric bell indicator fitted in the wheelhouse, with alarm bells fitted throughout the accommodation spaces. Water spray curtains are also

The second-class cafeteria can provide hot and cold meals for 140 people



The second-class lounge on the promenade deck seats 312 people

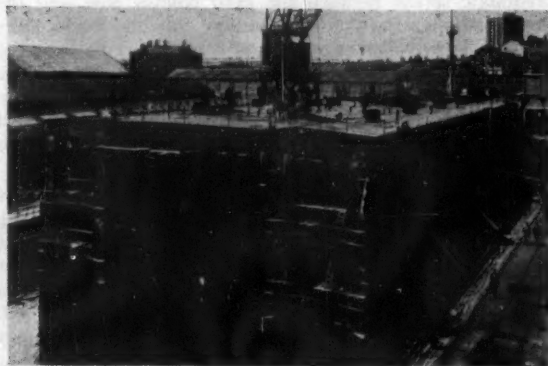
fitted in all garage spaces, the curtains having independent water circuits supplied from separate electrically-driven fire pumps in the engine room.

The lifesaving appliances fitted comprise two Class B motor lifeboats (accident boats) each seating 37 persons and six hand-propelled lifeboats, each seating 56 persons.

REBUILDING THE "ESSO PORTSMOUTH"

WORK has now been completed on the reconstruction of the Esso Petroleum Company's tanker *Esso Portsmouth*. This was the vessel involved in the accident at Milford Haven on 8 July 1960, when there was a series of explosions and a fire during discharging. This caused extensive damage, and the ship has now been given a new mid-section. The mid-section is larger than the one it replaced, resulting in an increase of deadweight of about 1,700 tons, while the opportunity was taken to move the bridge to the stern of the ship, a new one being built over the poop deckhouse. The construction of the new mid-section and bridge was done at the Walker yard of Vickers-Armstrongs (Shipbuilders) Ltd, where the ship was originally built in 1959, while the docking work was done by Swan, Hunter & Wigam Richardson Ltd, Wallsend. Out-fitting work was done at the Palmers Hebburn yard of Vickers-Armstrongs.

To ascertain the full extent of fire damage the vessel was drydocked by Swan, Hunter & Wigam Richardson between 11 and 26 August 1960. The examination revealed extensive damage to shell plating from stem to poop and to most of the deck plating, especially in way of No 3 port tank where the deck had been blown out a distance of about 4ft. Even after



The new mid-section and the bows being docked before joining

All the lifeboats, which are of glass fibre construction, were supplied by William Weatherhead & Son (1954) Ltd, Cockenzie. A total of 46 inflatable liferafts are carried. Eight sets of "Bi-luff" overhead gravity davits by Marine & Allied Industries (C. & I.) Ltd have been installed for the launching of the lifeboats.

The vessel is propelled by twin screws, each screw being driven through double reduction gearing by a set of turbines built by Wm. Denny & Bros Ltd. The sets together are capable of developing a total of 11,500 shp at 270 rpm at full power. The starting platform is arranged at the forward end of the turbines at engine room floor level. The boiler room is a separate watertight compartment, situated immediately forward of the engine room and connected to the latter by a watertight door. Steam is generated by two watertube boilers of Babcock & Wilcox integral furnace type, constructed for a designed pressure of 410 lb/sq in. Superheaters are fitted to the boilers and are arranged to supply steam from the outlet at 350 lb/sq in and a temperature of 650 deg F.

The electrical installation is supplied with power from four diesel-driven generating sets, each of 250 kW at 225 volts capacity, the combined units being of W. H. Allen, Sons & Co Ltd manufacture. A 50-kW 225-volts capacity emergency generator supplied by Ruston & Hornsby Ltd, is fitted on the navigating bridge deck and an emergency Nife battery of 100 A/H capacity is also provided.



The stern section, with the new bridge built on, entering dock for joining

this deformation the welded seams and butts had remained intact. The internal damage was serious between cargo tanks 2 and 10 where bulkheads, stringers and webs, etc, had been blown down into adjacent tanks. The bridge structure was completely gutted by fire and beyond any form of repair. After consultation between the owners and underwriters, it was decided to cut out the middle section of the vessel between Nos 2 and 6 tanks and replace it with a new midship section, rejoin the forward and after ends and later join all three sections in drydock. Before repairs started, the owners took the opportunity to increase the size of the vessel by installing an extra cargo tank incorporated into the new centre section. This additional lengthening of vessel involved the fitting of doubling straps to deck and shell to maintain longitudinal strength. The hull was lengthened by 40ft, and the deadweight increased from 36,040 tons to 37,713 tons.

During the period when the vessel was laid up, dehumidifiers were fitted to protect the machinery. On 22 March 1961 the ship was docked again for cutting into three pieces, and after the cutting it was necessary to build half-height bulkheads to allow the mid-section to float safely. On July 10 the new mid-section was towed from Vickers-Armstrongs Walker yard, followed later by the after section. The joining up of the sections was completed on December 26, when the ship was undocked and taken to Hebburn for fitting out.

Denny-Brown-A.E.G. Stabiliser

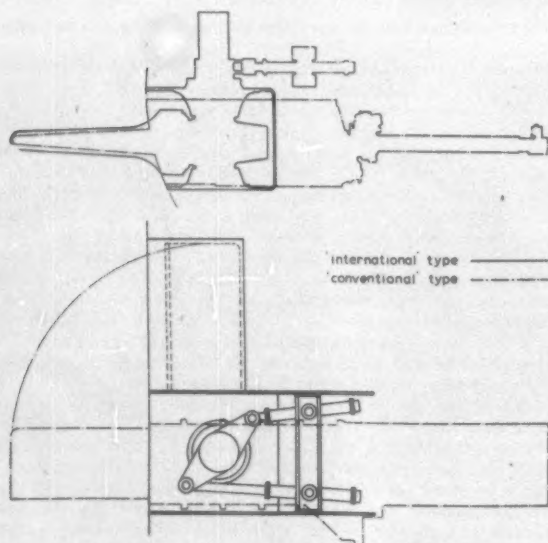
FIRST INSTALLATION IN "CALEDONIAN PRINCESS"

THE cross-channel vessel *Caledonian Princess*, described elsewhere in this issue, is fitted with the prototype of a new design of activated fin stabiliser. Known as the Denny-Brown-A.E.G. stabiliser, it has been developed by Brown Brothers & Co Ltd and Wm. Denny & Brothers Ltd in conjunction with two German firms, A.E.G. and Deutsche Werft. The first two named are of course the two firms which developed the Denny-Brown stabiliser that has been fitted to very many ships in the years since the war. Deutsche Werft, the Hamburg shipbuilding firm, developed a stabiliser of its own some years ago but then combined forces in this field with the two British companies. A.E.G. is the electrical and engineering concern in the same group of German firms as Deutsche Werft.

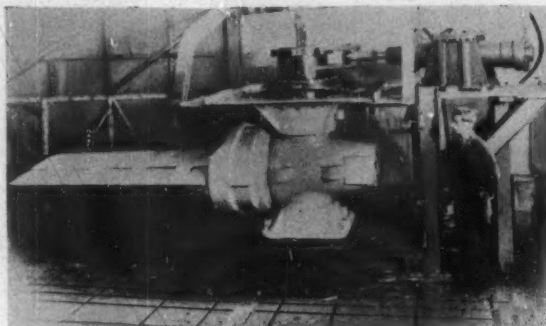
The new stabiliser is a development of the Denny-Brown stabiliser. It has been made by Brown Brothers with some components from Deutsche Werft and A.E.G., and employs the same gyro control system by Muirhead & Co Ltd as the Denny-Brown stabiliser. It differs from the latter in two important respects. The first is that instead of being withdrawn straight into the hull, the fins rotate forward about a vertical spindle and lie fore and aft when housed. The second is that to tilt the fins, use is made of the rotary vane principle developed by A.E.G. for the control of rudders. (Brown Brothers hold a licence from A.E.G. for the manufacture of this type of rudder.)

The use of the rotation principle to house the fins means that a considerable saving of space can be made inside the ship. The difference in this respect between the conventional and the "international" type of stabiliser can be seen from the accompanying sketch. Stabiliser fins exert the greatest leverage on the ship when they are sited at the point of maximum beam, and the new arrangement should give greater latitude in siting fins clear of propelling or auxiliary machinery.

The rotary vane principle is by now well known. A



Comparison of space occupied by stabilisers of old and new types



The port stabiliser for the "Caledonian Princess" under test at the makers' works

cylindrical space round a shaft that has to be turned (normally a rudder stock) is divided into radial segments by vanes projecting alternately from the shaft and the surrounding casing, and torque is applied by pumping oil into every alternate segment. In the case of the stabiliser the shaft is the fin shaft, and this remains stationary, while the fin forms the casing and does the moving. The fact that tilting does not involve any rotation of the fin shaft, as would normally be the case, obviously makes it easier to design a satisfactory rotating housing system.

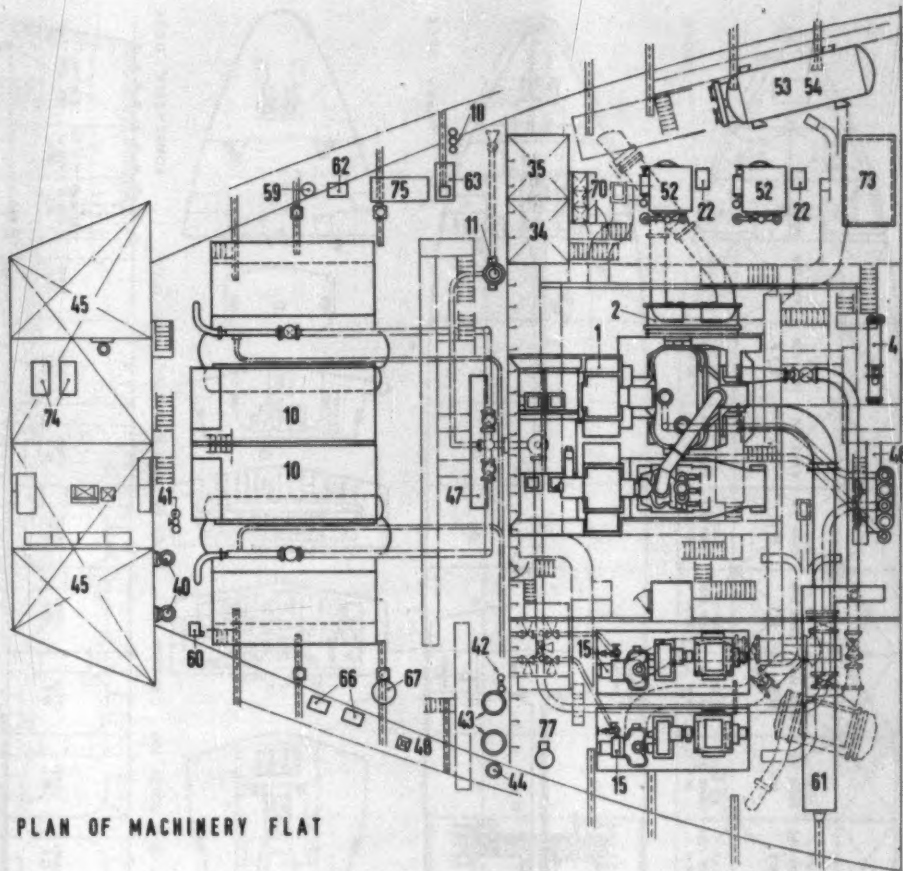
Working Parts Protected

One of the design considerations which led to the concept of the Denny-Brown-A.E.G. stabiliser was that as few working parts as possible should be exposed to sea water. This is in order to reduce maintenance in dry dock of the exposed parts. Most working parts of this stabiliser, which normally would be exposed, have been encased in an oiltight casing and are adequately protected from sea water.

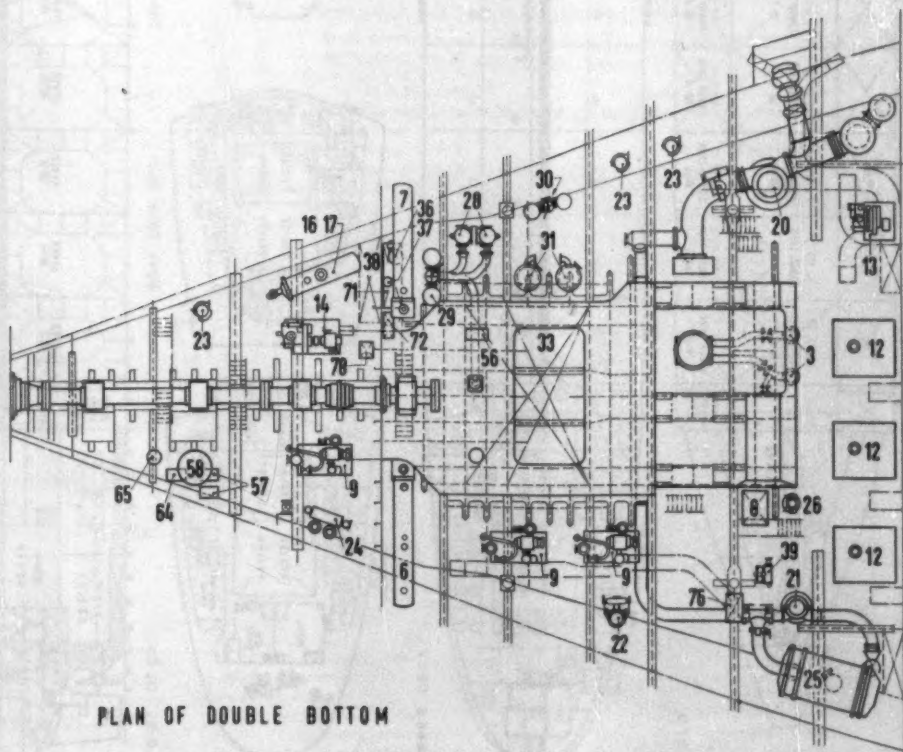
The stabiliser fins are in essence of the standard Denny-Brown type, each made in two pieces, the main part tilting about the centreline of the finshaft and the tail portion tilting relatively to the main fin. The power for tilting the fins is supplied by an electric motor driving two V.S.G. variable delivery pumps, one for each fin, which deliver oil under pressure to the vane units inside the fins. A separate auto-controlled V.S.G. pump supplies power for housing and extending the fins and for operating the hydraulic servos between the gyro control gear and the main pumps. Each fin is located on its finshaft by Timken taper roller bearings and is oscillated by the vane motor through a flexible drive. The tail portion of the fin is moved relative to the main fin by a rack and quadrant mechanism. The whole of this equipment is encased and sealed from the sea by the Simplex-type seal which is manufactured by Deutsche Werft.

The whole fin assembly is carried in a crux which has integral with it an upper and lower trunnion pin acting as the main pintles for rotating the fins into the housed position. These trunnions are carried in bushed brackets securely bolted to the fin box, the upper bracket acting as the sea gland through which the fluid supplies are led.

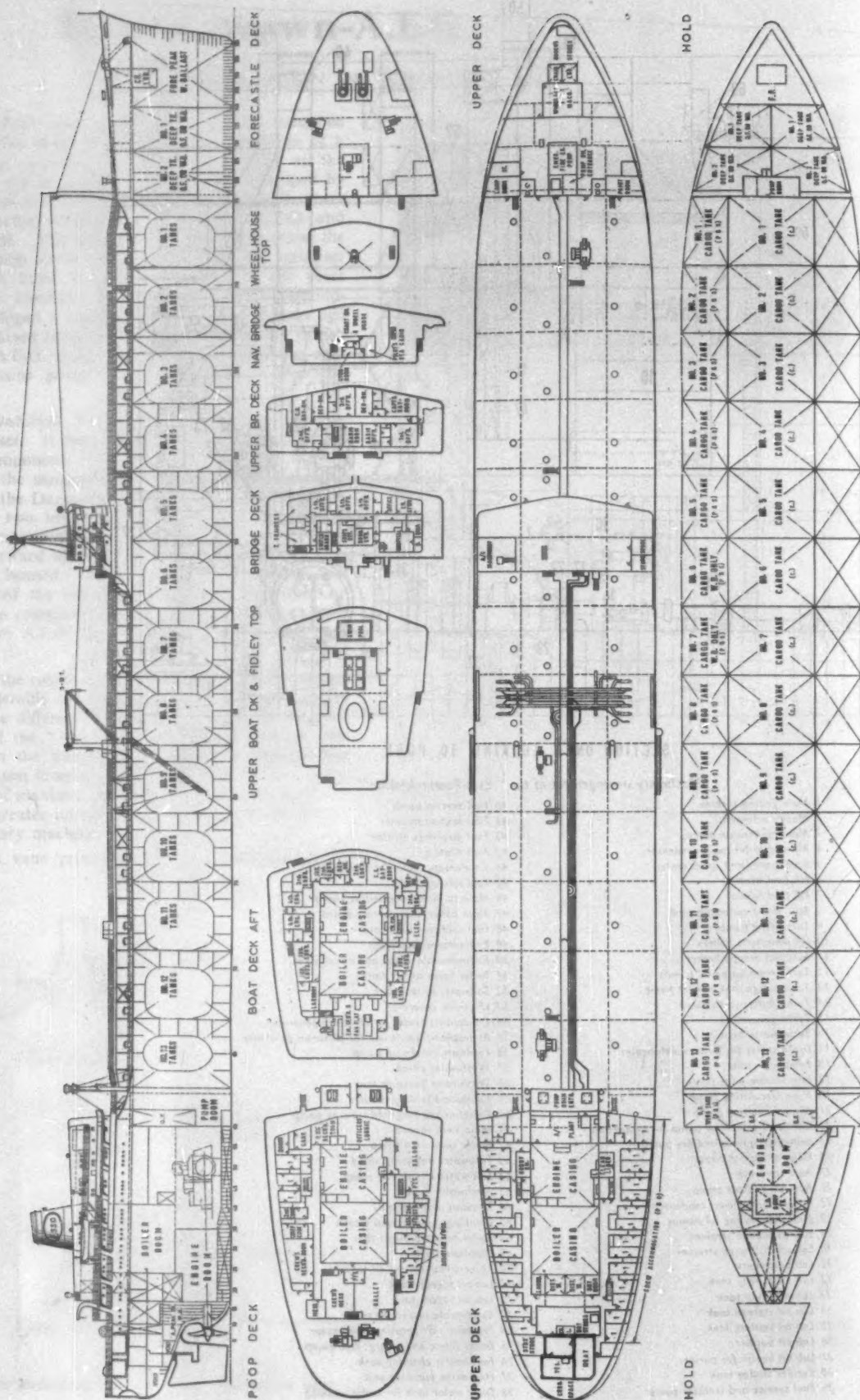
Very little fitting and erection work is required to install this type of stabiliser as the whole assembly, including the fin boxes, can be supplied from the manufacturers as a packaged unit ready for welding into the hull.



PLAN OF MACHINERY FLAT



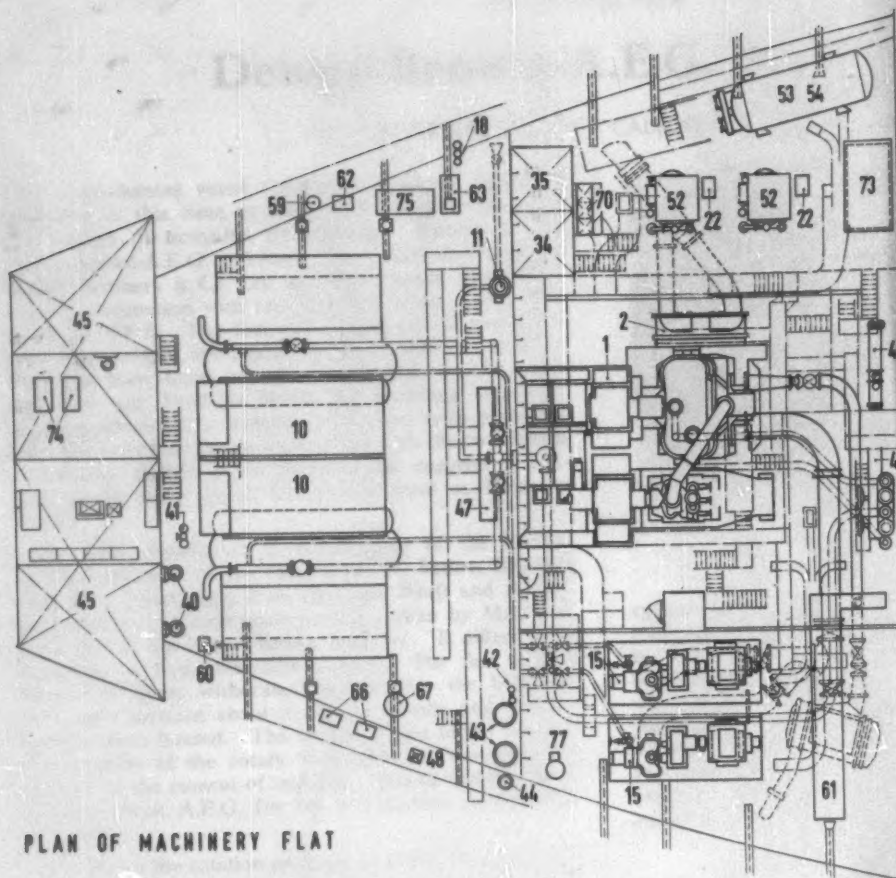
PLAN OF DOUBLE BOTTOM



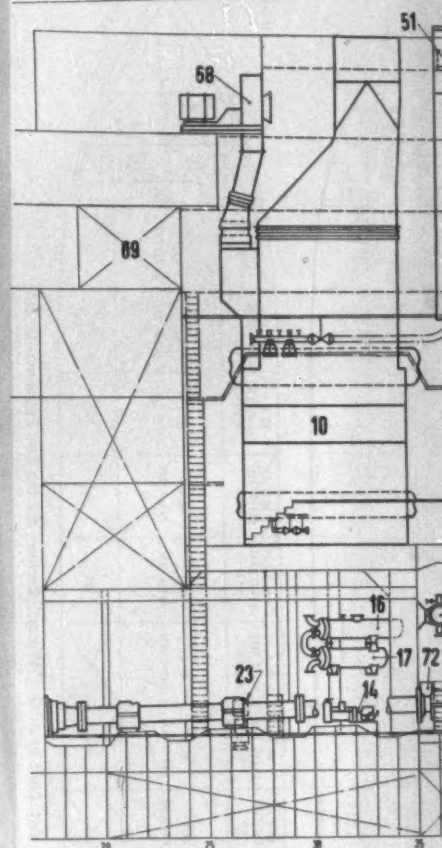
General arrangement of the tanker "Esso Pembroke," 77,000 dwt built by A. G. "Weser," Bremen, for the Esso Petroleum Co Ltd

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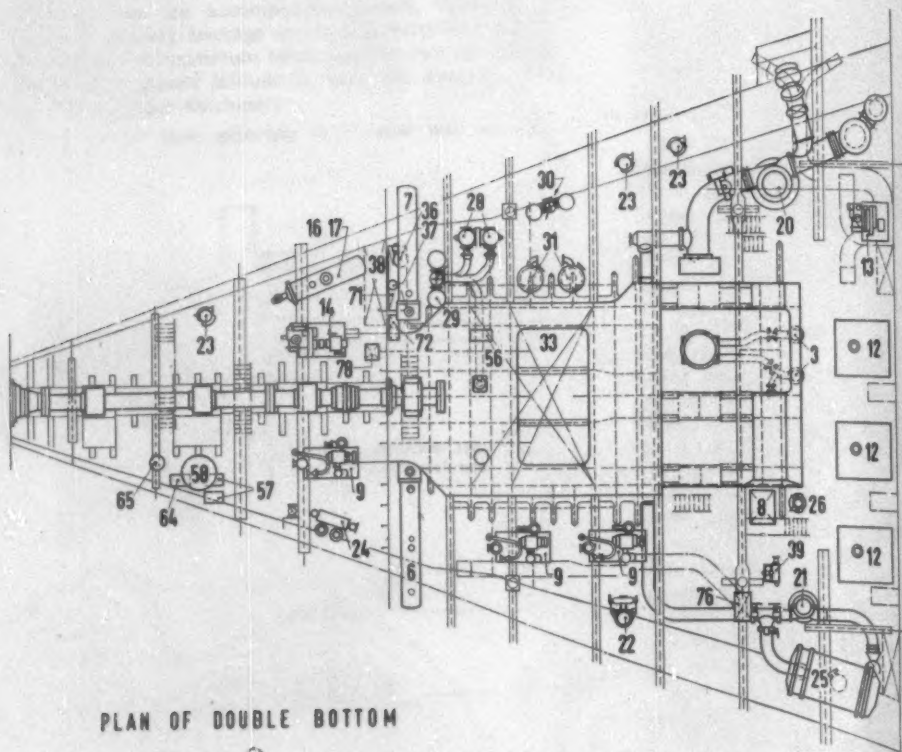
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PLAN OF MACHINERY FLAT

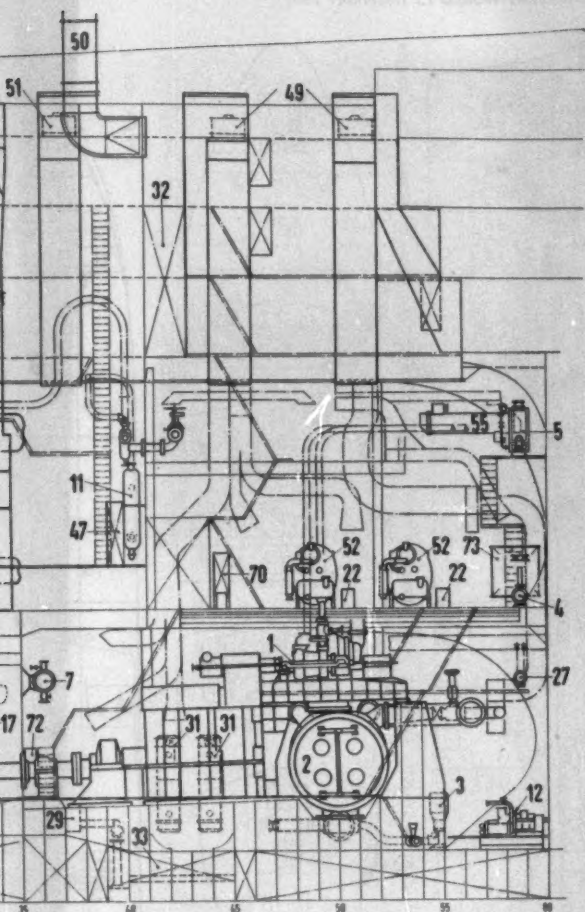


SECTION ON C
Machinery arrangement



PLAN OF DOUBLE BOTTOM

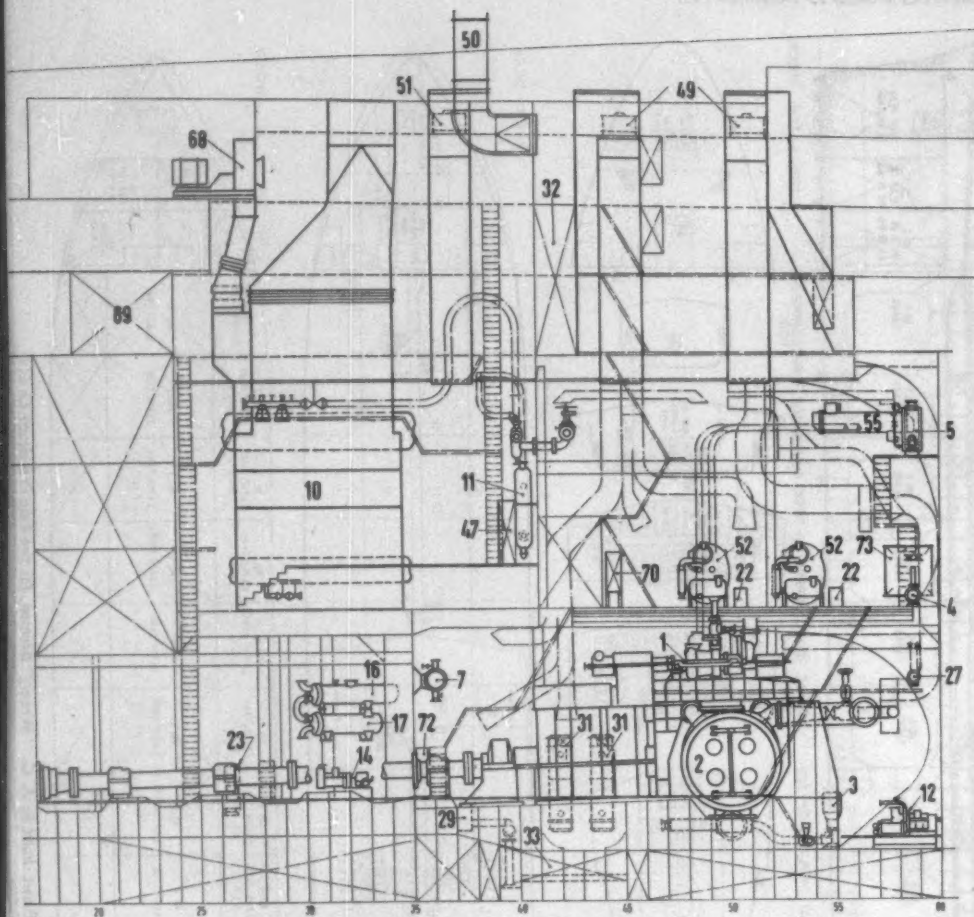
- 1 Main geared turbine
- 2 Main condenser
- 3 Main condensate pumps
- 4 Air ejector for main condenser
- 5 Feed heater and cond. cooler
- 6 HP feed heater
- 7 HP feed heater
- 8 Atm. drain collecting tank
- 9 Turbo-feed pumps
- 10 HP watertube boilers
- 11 External desuperheater
- 12 Turbo main cargo oil pumps
- 13 Turbo cargo tank ballast pump
- 14 Turbo Butterworth pump
- 15 Turbo generators
- 16 Butterworth heater
- 17 Drain cooler for Butterworth heater
- 18 Sampling cooler
- 19 Engineer room bilge pump
- 20 Main circulating pump
- 21 Aux. circulating pump
- 22 Chemical-compound pump for evaporator
- 23 Saltwater service and fire pump
- 24 General service pump
- 25 Aux. condenser
- 26 Aux. condensate pump
- 27 Air ejector for aux. condenser
- 28 Main lubricating oil pumps
- 29 Lub oil suction strainer
- 30 Lub oil discharge strainer
- 31 Lub oil coolers
- 32 Lub oil gravity tank
- 33 Lub oil sump tank
- 34 Lub oil storage tank
- 35 Lub oil settling tank
- 36 Lub oil purifier
- 37 Lub oil heater for purifier
- 38 Purifier sludge tank
- 39 Fuel service and transfer pump



ON & LOOKING TO PORT

ement of the "Esso Pembroke"

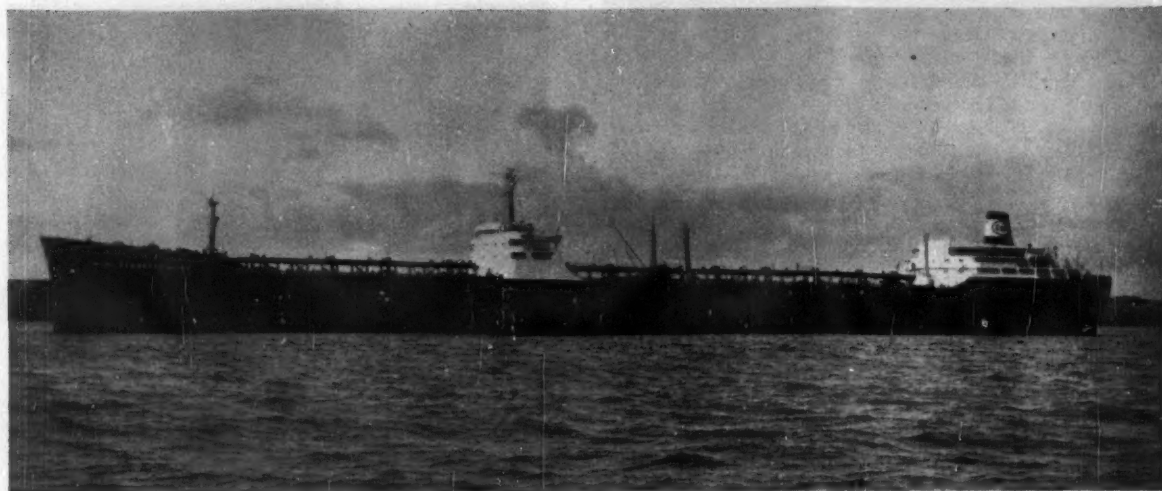
- 40 Fuel service pump
- 41 Fuel suction strainer
- 42 Fuel discharge strainer
- 43 Fuel heaters
- 44 Condensate cooler for fuel heaters
- 45 Fuel settling tanks
- 46 Main turbine manoeuvring board
- 47 Main boiler manoeuvring board
- 48 Fuel cold starting heater
- 49 Engineer room supply fan
- 50 Engineer room exhaust and annulus fan
- 51 Boiler room supply fan
- 52 Saltwater evaporators
- 53 LP-steam generator
- 54 Condensate cooler for LP-steam generator
- 55 Atmospheric condenser for LP-steam generator
- 56 Feedwater make-up pump
- 57 Washwater pump
- 58 Washwater pressure tank
- 59 Compound tank for boilers
- 60 Diesel-driven fuel cold-starting pump
- 61 Main switchboard
- 62 Boiler compound pump
- 63 Feedwater analysing stand
- 64 Hot water circulating pump
- 65 Freshwater heater
- 66 Drinking water pumps
- 67 Drinking water pressure tank
- 68 Boiler forced-draught fans
- 69 Distillate tanks
- 70 Three-compartment oil tanks
- 71 Lub oil saveall tank
- 72 Lub oil supply tank
- 73 Condensate inspection tank
- 74 Provision refrigerating compressor
- 75 Boiler filling and emerg. feed pump
- 76 Fuel heater cleaning tank
- 77 Hydrazine pumping unit
- 78 Dirty water tank for boiler washing



SECTION ON Q LOOKING TO PORT

Machinery arrangement of the "Esso Pembroke"

- | | |
|--|---|
| 1 Main geared turbine | 40 Fuel service pump |
| 2 Main condenser | 41 Fuel suction strainer |
| 3 Main condensate pumps | 42 Fuel discharge strainer |
| 4 Air ejector for main condenser | 43 Fuel heaters |
| 5 Feed heater and cond. cooler | 44 Condensate cooler for fuel heaters |
| 6 HP feed heater | 45 Fuel settling tanks |
| 7 HP feed heater | 46 Main turbine manoeuvring board |
| 8 Atm. drain collecting tank | 47 Main boiler manoeuvring board |
| 9 Turbo-feed pumps | 48 Fuel cold starting heater |
| 10 HP watertube boilers | 49 Engineer room supply fan |
| 11 External desuperheater | 50 Engineer room exhaust and annulus fan |
| 12 Turbo main cargo oil pumps | 51 Boiler room supply fan |
| 13 Turbo cargo tank ballast pump | 52 Saltwater evaporators |
| 14 Turbo Butterworth pump | 53 LP-steam generator |
| 15 Turbo generators | 54 Condensate cooler for LP-steam generator |
| 16 Butterworth heater | 55 Atmospheric condenser for LP-steam generator |
| 17 Drain cooler for Butterworth heater | 56 Feedwater make-up pump |
| 18 Sampling cooler | 57 Washwater pump |
| 19 Engineer room bilge pump | 58 Washwater pressure tank |
| 20 Main circulating pump | 59 Compound tank for boilers |
| 21 Aux. circulating pump | 60 Diesel-driven fuel cold-starting pump |
| 22 Chemical-compound pump for evaporator | 61 Main switchboard |
| 23 Saltwater service and fire pump | 62 Boiler compound pump |
| 24 General service pump | 63 Feedwater analysing stand |
| 25 Aux. condenser | 64 Hot water circulating pump |
| 26 Aux. condensate pump | 65 Freshwater heater |
| 27 Air ejector for aux. condenser | 66 Drinking water pumps |
| 28 Main lubricating oil pumps | 67 Drinking water pressure tank |
| 29 Lub oil suction strainer | 68 Boiler forced-draught fans |
| 30 Lub oil discharge strainer | 69 Distillate tanks |
| 31 Lub oil coolers | 70 Three-compartment oil tanks |
| 32 Lub oil gravity tank | 71 Lub oil saveall tank |
| 33 Lub oil sump tank | 72 Lub oil supply tank |
| 34 Lub oil storage tank | 73 Condensate inspection tank |
| 35 Lub oil settling tank | 74 Provision refrigerating compressor |
| 36 Lub oil purifier | 75 Boiler filling and emerg. feed pump |
| 37 Lub oil heater for purifier | 76 Fuel heater cleaning tank |
| 38 Purifier sludge tank | 77 Hydrazine pumping unit |
| 39 Fuel service and transfer pump | 78 Dirty water tank for boiler washing |



The "Esso Pembrookeshire"

FIRST OF FIVE NEW "COUNTY" CLASS TANKERS FOR ESSO

THE FIRST of a series of five new "County" class oil tankers of about 77,000 dwt has been delivered to the Esso Petroleum Co Ltd, London. This vessel, the *Esso Pembrookeshire*, 79,538 dwt, has been built by A. G. "Weser," Bremen, who are also building a further two tankers for Esso. Other ships of this new class are being built by Verolme United Shipyards, Rotterdam, and Kockums Mek. Verkstads A/B, Malmö. In the affiliated companies' new building programme there are, in addition to tankers of 77,000 dwt on order, six of 86,000 dwt to be built.

The *Esso Pembrookeshire* was launched on 27 June 1961 by Lady Marion Philipps, wife of the Lord Lieutenant of Pembrookeshire. Not only is the *Esso Pembrookeshire* the largest ship yet owned by Esso but she has also the largest displacement of any ship yet built in Europe. The handing-over ceremony took place at Bremerhaven on October 31 and the vessel sailed for Milford Haven on November 1, proceeding from the latter port to Banias on November 10. It is expected that she will be in service between the Middle East and the Esso refineries at Fawley or Milford Haven.

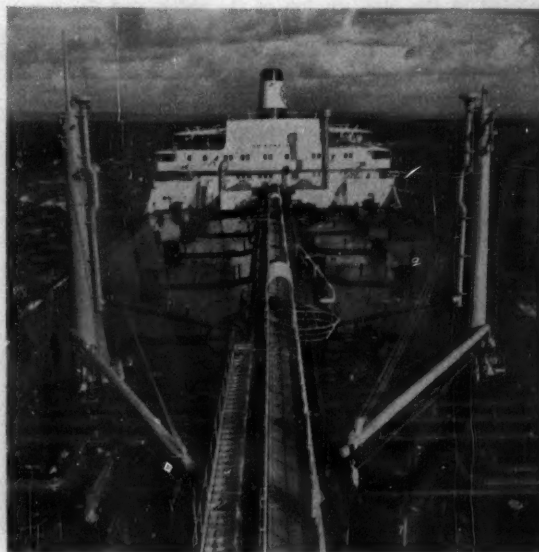
Propulsion is by steam turbine machinery built by A. G. "Weser" giving a speed of about 17½ knots. The three oil cargo pumps are of British make and each has an output of 2,300 tons of water/hour. The main suction valves in the tanks are hydraulically operated. The general finish of the accommodation, the engineroom layout and hull construction is of a standard seldom to be found in a merchant ship.

The principal particulars of the *Esso Pembrookeshire* are as follows:

Length o.a.	...	855ft 10in
Length b.p.	...	820ft
Breadth moulded	...	112ft 6in
Depth moulded	...	62ft 6in
Draught, summer	...	47ft
Deadweight	...	79,538 tons
Displacement	...	99,688 tons
Gross tonnage	...	48,815 tons
Net tonnage	...	30,506 tons
Machinery output (normal)	...	24,100 shp
Service speed	...	16½ knots

The *Esso Pembrookeshire* has been built on conventional lines with the bridge amidships. With the exception of riveted longitudinal seams required by Lloyd's Register as crack arresters she is of all-welded construction: to obviate the need for crack arresters at the upper turn of the bilge and lower edge of sheer strake these two strakes are of Grade E notch-tough steel. The rudder and stern are of the "Mariner" type so that there is no need for a stern frame bottom skeg. In order to reduce the possibility of propeller-excited vibration the stern frame is of a "wake adapted" design. (During the passage from Bremerhaven to Milford Haven the engines were run at various speeds and the weather conditions were varied but there was little trace of any vibration). A stern anchor is carried.

The hull over the cargo tank length is divided longi-



View looking aft from the bridge

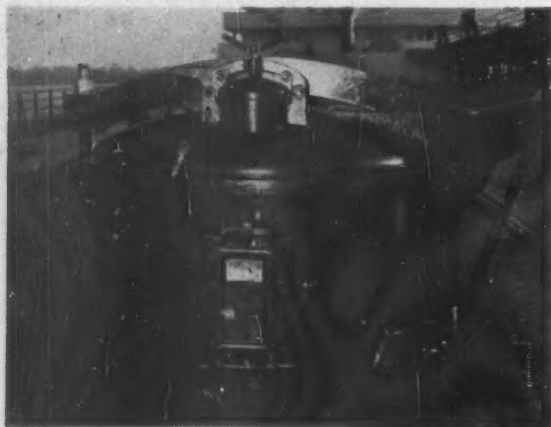
tudinally and transversely into 39 compartments, Nos 6 and 7 wing tanks being used exclusively for water ballast. Cathodic protection has not been installed in any of the tanks. The main pumproom is immediately forward of the engine room and contains three Hayward Tyler centrifugal cargo pumps, each having a capacity of 2,300 tons of salt water/hour when discharging against a head of 350ft. These pumps are driven through reduction gearing by steam turbines each developing 1,100 bhp in the above condition. The speed of the turbines is 5,916 rpm and that of the pumps 1,280 rpm. The ballast pump is also of Hayward Tyler make and has a capacity of 1,300 tons/hour. The speed of the turbine driving this pump is 5,960 rpm and this is reduced by gearing to 1,460 rpm. Turbines and gearing have been made by A. G. "Weser."

In addition to the above there are three 380-tons Atlas Werke steam-driven duplex cargo stripping pumps. These have been designed with a low clearance volume so that petroleum vapours may be pumped, thereby overcoming the difficulties usually associated with the final stripping of cargo tanks against high back pressure from the shore installation. Steam governor controls have been fitted in order to regulate overspeeding. The main cargo pumps drive through the bulkhead separating the engine room from the pump room and are fitted with Flexibox mechanical seals.

Hydraulically-Operated Cargo Valves

The main cargo discharge lines are of 20-in diameter and are located within the wing tanks near to the neutral axis, emerging from the pump room through the deck at the central manifold. The 20-in crossover valves and the 16-in main suction valves are hydraulically operated. The main contractors for the cargo valve hydraulic system are G. Dijkers & Co N.V., Hengelo, Holland, using valves of their own manufacture with Cupedo actuators and Vickers-Detroit power packs.

The power packs are located one aft, one amidships and one in the forecastle space. Each unit comprises an electric motor coupled to a hydraulic pump operating at 750 lb/sq in, above which a fluid supply and return reservoir, and nitrogen-charged accumulators have been arranged. The pressure and return lines are of Yorcalbro with soldered sleeve couplings, and are attached to manifolds on the fore and aft catwalk. To and from these lines run the supply and return from the slave mechanism located in the tank on top of the valve and the respective remote control stations, which are adjacent to the cargo hatch coaming. In the event of complete power



One of the Cupedo actuator controls and indicators fitted to the cargo lines



View of the after end of the bridge structure showing the rounded top

failure, the three power-packs can together operate six gate valves simultaneously from one end position to the other in eight seconds. Cockburn-Rockwell butterfly valves are fitted in the main pump room, and also at the cargo manifold, for 16-in valves and over.

The firefighting installation is extensive, and protection of the deck area in way of the cargo tanks and oil fuel bunkers is by means of dual foam and fire lines with eight permanently-mounted foam monitors of Bronswerk manufacture. These are arranged to give complete coverage of the area with an available discharge of 12,500 gallons of foam/minute. The metering of foam compound of water is entirely automatic during the operation. Means are also provided for discharging foam into the tanks by means of hand applicators. A complete CO₂ installation is provided for protection of the engine room and boiler room, and a water fog installation is provided for protection of the pumproom.

Rolls-Royce Diesel Fire Pump

Water for firefighting purposes will normally be supplied by the 1,000-gpm steam turbine-driven Butterworth pump, and two 600-gpm motor-driven fire pumps all located in the main machinery spaces. In addition a 600-gpm emergency Rolls-Royce diesel fire pump is mounted in the forecastle space, this unit being supplied by a booster pump located in the bottom of the forward pump-room and driven by a closed hydraulic circuit from the diesel prime mover.

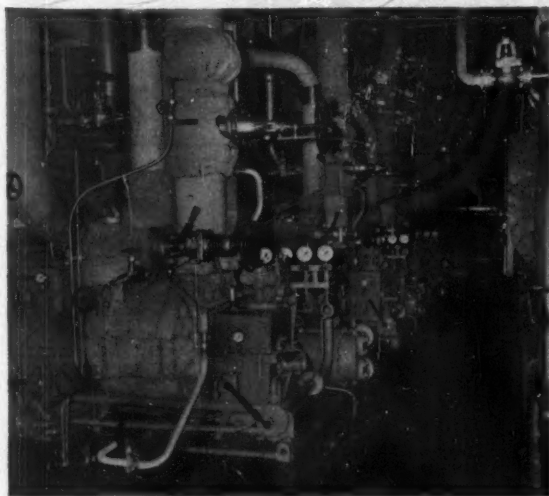
Separate mains are provided along the main deck for the supply of foam and water, allowing the simultaneous use of both mediums. The lines are suitably cross-connected to form a series of ring mains, so as to give greater flexibility to the system.

The deck machinery is steam driven and includes totally-enclosed steam reciprocating mooring winches of Helsingborg design and manufacture, each having 1,200ft of 1½-in dia wire stowed on the drum, and used in conjunction with universal-type fairleads. Since they may be needed at sea-line terminals, terylene hawsers have also been supplied. Two vertical-type capstan anchor cable lifters also supplied by Helsingborg are arranged for independent operation on the forecastle deck.

The accommodation in the *Esso Pembroke* is really excellent. Furnishings and fittings are all neatly executed,

and the décor is most restful and up to the standard of a good passenger liner. Thermostat air conditioning has been installed throughout and, with the exception of the trainees who have double-berth rooms, single cabins have been provided for all members of the crew. As a precaution against fire damage, incombustible linings and bulkheads of plain Marinite, Marinite faced with laminated plastic of hard finish prepared ready for painting, and ceilings of Marinite have been used.

Accommodation for the captain and deck officers is arranged in the midships deckhouse, where there is also a hospital and dispensary. The engineer officers and the crew are housed aft, where there are the officers' dining saloon, smokeroom, crew's mess and recreation room. There are laundries, complete with Hoover washing machines and English Electric tumbler driers, for the use of all on board. All officers and POs have separate toilets and showers and one is provided for each two members of the crew. Amenities include a hobbies room, dark room, a large deep swimming pool with a freshwater



The three Hayward Tyler centrifugal cargo pumps can discharge a full cargo in about 16 hours

shower adjoining, facilities for showing films, and relaying radio and taped music to all public rooms.

Navigational aids include Decca type TM969 radar, Decca Navigator, Kelvin & Hughes visual depth indicator type F Mk I, SAL log, Marconi Lodestar D/F and Siemens telegraphs. Hastie electro-hydraulic steering gear is controlled from the wheelhouse, fidley top and steering gear compartment. Control from the wheelhouse is by means of a BBC-Sperry electric unit which eliminates the need for telemotor piping. As will be seen from the accompanying drawing, the ship has a combined wheelhouse and chartroom, thereby bringing all the navigational equipment under the immediate control of the officer on watch. "Wide-Vista" windows supplied by Bull's Metal & Marine Ltd have been fitted.

Propelling Machinery

The propelling machinery in the *Esso Pembrookshire* consists of a cross-compound double-reduction geared turbine installation of advanced design built by A. G. "Weser", and designed to develop a normal output of 24,100 shp at 105 rpm, and a maximum of 26,500 shp at 108.5 rpm when supplied with steam at 835 lb/sq in pressure and 850 deg F. In the engine room considerable

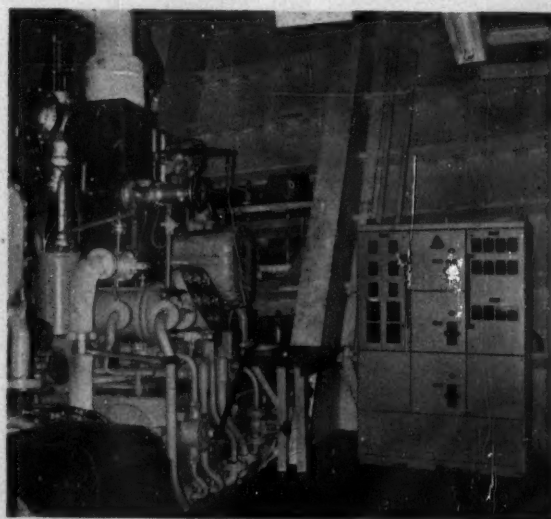


The 1-ton air-operated Telcon hoist for handling machinery parts is located at the after end of the boat deck

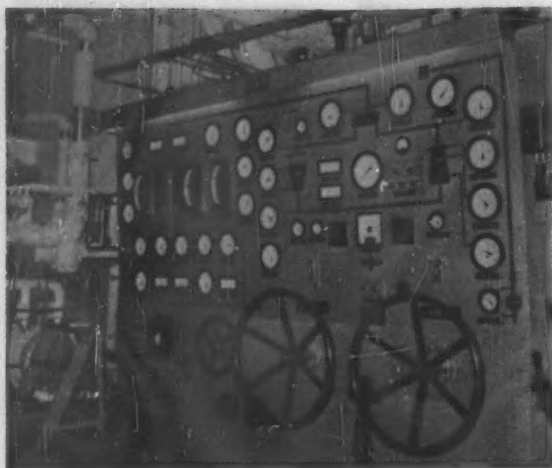
attention has obviously been given to even the smallest detail of layout, and the result is highly satisfactory, resulting in the absence of unnecessary lengths of piping and ample room for overhaul and repair. A one-ton air-operated Telcon hoist, the first of its type to be used on board ship, is fitted on the after end of the boatdeck and this can reach into the steering gear flat, which opens to the engine room for the removal of machinery parts. The hoist runs on a transverse rail extending 5ft outboard on either side of the ship.

The HP ahead turbine is of Howaldtswerke A.G. design and is of the single-flow impulse type, having one single-row partial admission first-stage wheel followed by several single-row full admission stages. The LP turbine, designed by A. G. "Weser," is of the single-flow impulse reaction type, with the first three stages impulse and the remaining stages reaction. An impulse-type astern turbine is carried on the after end of the LP rotor.

There are eight uncontrolled and 18 controlled nozzles. The controlled nozzles are arranged in three groups of



Control end of one of the 1,000-kW AC turbine-driven alternators



The main manoeuvring panel incorporates a mimic diagram

three, five and ten respectively. Four bleed points on the turbine casing provide for four-stage feed heating and other bled steam requirements. The main condenser is mounted athwartships beneath the LP turbine, and the propeller thrust bearing is located aft of the gearcase. The manoeuvring panel incorporates a mimic diagram and is the first of its kind to be installed in an Esso ship.

The speed reducing unit between the turbines and the forward section of propulsion line shafting is of the multiple-pinion double-reduction geared forced-lubricated articulated design and the fabricated steel gearcase housing was sand blasted internally and coated with Esso Rustban 297. The 31-in diameter propeller line shafting terminates in a four-bladed nickel aluminium propeller weighing 34 tons. Simplex stern tube sealing, by Deutsche Werft, Hamburg, has been adopted, and this allows bedding the all-steel tailshaft in white metal lined stern tube sleeves. Simplex seals are fitted at the outer and inner end of the tailshaft, preventing ingress of sea water and loss of stern tube lubricating oil.

Steam Generation

Steam is generated in two Babcock & Wilcox type single-furnace boilers designed for a pressure of 965 lb/sq in. Each boiler has a normal output of 90,000 lb/hr of steam, and 150,000 lb/hr on overload. This is the highest evaporation figure yet attained in a merchant ship. The working pressure and temperature at the superheater are 850 lb/sq in and 890 deg F. Each boiler has walk-in superheaters, Kablitz gas air heaters, C.E.A. Luft-kuhler steam air heaters,

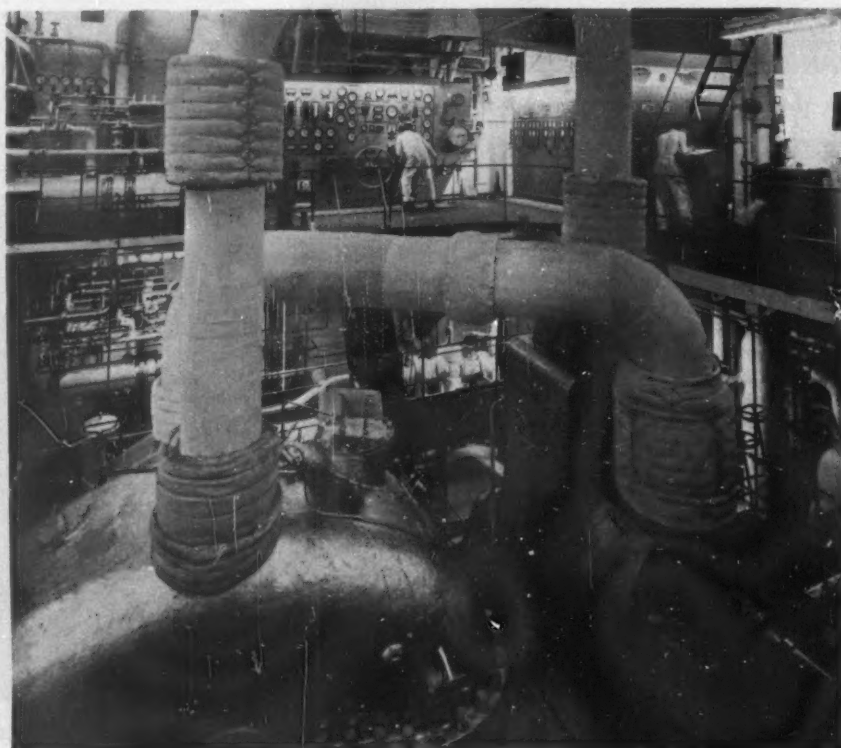
Babcock & Wilcox P.W. type burners fitted to their Iowa type registers, and Diamond retractable sootblowers fitted in the superheater banks of each boiler. Steam air heaters are fitted in addition to gas air heaters to combat dew point corrosion, but may be blanked off later subject to results in service. Bailey combustion control and two-element feed water controls are fitted. The boiler sootblowers are operated pneumatically by Telektron equipment. Sequence operation is employed.

An external steam desuperheater capable of desuperheating 100,000 lb of steam/hour has been provided for supplying desuperheated steam to the cargo pump turbines, ballast and Butterworth pump turbine and Butterworth heater. It can also be used to supplement the internal desuperheater supply. A secondary steam system comprising an LP steam/steam generator, with associated condenser, condensate cooler and feed pump, is installed. The steam generator, supplied from the internal desuperheater, has an output of 67,000 lb/hour steam at 215 lb/sq in and provides steam for cargo, bunker, and fuel oil tank heating, deck machinery, various reciprocating pumps and domestic heating.

Four-Stage Feed Heating System

For operation in conjunction with the main propulsion plant, a four-stage feed heating system, giving a final feed temperature of 400 deg F has been adopted. This system incorporates Worthington condensate extraction pumps, main air ejectors of Balcke manufacture, and feed water heaters and deaerator manufactured by Schmidt Sohne. Main feed pumps are two-stage Worthington units, driven by turbines made by A. G. "Weser." Two Schmidt Sohne 40 tons/day Monobloc sea water evaporators are also installed.

Three forced draught fans are provided and arranged so that in the event of breakdown one fan can always be coupled up to a boiler; for example, port fan to starboard boiler, starboard fan to port boiler or centre fan to either



Engine room view over the main propulsion turbines, with the main control panel and switchboard in the background

Armstrong

Armstrong Cork Company Limited, the originators and manufacturers of the ships decking compositions now known as ARANBEE, announce that their long association with Rowan and Boden Limited, will come to an end on 31st December, 1961, in accordance with the agreement between them.

From 1st January, 1962, Armstrong Cork Company Limited will manufacture and sell these decking compositions under the registered trade name of "ACCODEK" and their Marine Agents for the United Kingdom will be Durastic Limited.

ARMSTRONG CORK COMPANY LIMITED, KINGSBURY, LONDON N.W.9

Telephone: Colindale 7080

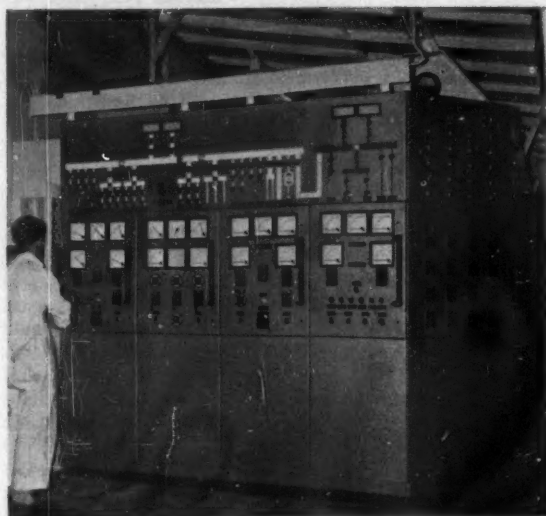


T.S.S. 'PRINCIPE PERFEITO'

BUILT BY

Swan, Hunter & Wigham Richardson, Ltd.,

WALLSEND-ON-TYNE & NEWCASTLE UPON TYNE



Part of the dead-front switchboard incorporating a mimic diagram and engine room alarms

boiler. These fans are driven by two-speed B.B.C. electric motors and are rated at 38,800 c.f.m. at 1,760 rpm and 25,400 c.f.m. at 1,150 rpm. The motors are installed in the emergency generator room on the boat deck.

Electricity is supplied by two 1,000-kW 440-volts 3-phase 60-cycles AC turbine-driven alternators. The turbines are of Howaldtswerke, Hamburg, manufacture, taking steam at 835 lb/sq in, 850 deg F, while the Brown-Boveri alternators are of the self-exciting, totally enclosed type with sea water-cooled heat exchangers. There is also a standby 12-cylinder Vee-type 370-hp radiator-cooled diesel-driven alternator in a compartment on the boat deck. This 220-kW alternator is of the Brown-Boveri drip-proof self-ventilated type.

All electrical auxiliary motors are of the squirrel cage induction type, single or two speed. Motors up to 60 hp are totally enclosed. Domestic supply is through 440/220 volts transformers, and fluorescent lighting is used throughout the accommodation and engine room. Mercury vapour fluorescent lighting is used for deck flood lights.

A dead-front switchboard with separate generator control panel, incorporating a mimic diagram and engine-room alarms, is installed. This unit is sited so that it is readily visible from the manoeuvring platform. Butyl rubber insulated, P.C.P. armoured and P.V.C. overall sheathed cable is used throughout on deck and in the engine room.

THE FIRST plastic buoy used in Irish waters is being tested at Carlingford Bar. The new type navigation marker weighs less than two tons, compared with the usual six tons of the more orthodox metal type, and costs in the region of £2,800. If the test is successful, Carlingford Lough Commissioners, who control the navigation in that area, will replace existing metal type buoys with the new plastic model.

SUBSTANTIAL reductions in the list prices of Fablonite decorative laminate have been made for both the standard and plain colour ranges. The standard range—with the exclusion of six special woodgrains—has been reduced by 9d to 3s per sq ft. For all the plain colours and special woodgrains the new price is 3s 4d per sq ft—a reduction of 11d.

THE 1962 edition has been published of Lloyd's Register's Rules—or to give it its full title, *Rules and Regulations for the Construction and Classification of Steel Ships*.

RECENT TECHNICAL DEVELOPMENTS

Adcora Pervon Anti-corrosive Coating

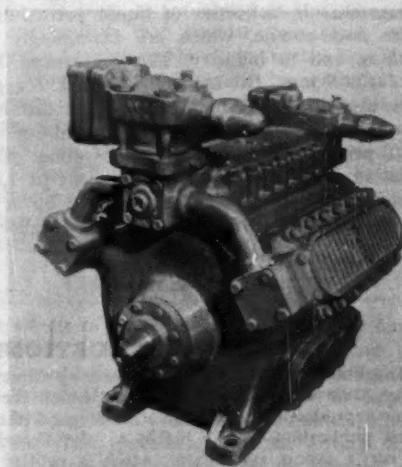
AN anti-corrosive coating which is claimed to represent an absolutely new approach to pitch resin formulations is being made by E. & F. Richardson Ltd, Buckingham, Bucks. Marketed as Adcora Pervon, this new coating is, generically, a polyurethane pitch coating. So far as the manufacturer is aware it is unique in Great Britain and, in general terms, its range of usefulness far surpasses that of epoxy pitch coatings, or indeed, most straight epoxy products. Adcora Pervon is essentially a protective coating, not a decorative paint. The pitch component limits the colour availability to black only. Adcora Pervon can readily be decorated with other types of product; these are detailed in the comprehensive technical data sheet issued by the manufacturers.

Oil-fired Air Heaters

A NEW range of oil-fired air heaters has been recently introduced by the Econoil Division of Nu-way Heating Plants Ltd, Droitwich, Worcs, providing efficient industrial low cost space heating. A feature is the lightweight construction which allows easy roof mounting, thus freeing floor space for machines and operatives while ensuring even warm air distribution. The heater units can be used with single diffusers or, in conjunction with ductwork having multiple outlets as a general heating system covering a wider area. They can be automatically operated by time clock in accordance with the working hours and are designed to provide quick warmth—within minutes of switching on. A mobile version of the Econoil Airheater is available for use where local warmth is required in one part of a large building or for emergency use of various descriptions. Heat outputs are X19—150,000-250,000 BThUs/hour and X24—300,000-380,000 BThUs/hour.

New Range of Refrigerant Compressors

A NEW range of V/W compressors having individual cylinder unloading permitting wide flexibility of operation is being supplied by York Shipley Ltd, North Circular Road, London NW2. Suitable for use with refrigerants 12 and 22, these units are of special interest to the heating and ventilating engineer in view of the step-by-step capacity control made possible in air-conditioning installations. These compressors are available in 3, 6 and 9-cylinder units and have been designed to meet



York Shipley refrigerant compressor

refrigeration requirements from 5 to 60 tons. An internal capacity control valve enables cylinder loading and unloading to be accomplished automatically. Designed for vee-belt or direct-drive operation in a speed range of 900 to 1,750 rpm, the minimum of floor space and headroom is required. Static and dynamic balance together with V/W design permits upper floor mounting without the need for special foundations. A large suction chamber reduces pulsation and large ring plate valves reduce chatter and ensure quiet running.

Oil Topics

GULF REFINERY AT EUROPOORT

THE Gulf Oil Corporation is to build another refinery in Europe. It will be situated in Holland at the Europoort, Rotterdam. The refinery will be Gulf's second in Europe. The first is being built at Stigsnaes, Denmark. The Europoort refinery will process $1\frac{1}{2}$ mn tons a year of crude oil. A substantial proportion of the output will be used to supply the firm's Dutch and Belgian markets and the remainder will be exported. It is expected that ground will be broken on the new refinery early in 1962. The choice of the Europoort as a site is a logical one. It has been designed principally for the transshipment of oil, and so provides excellent harbour aspects for tankers. Gulf Oil has leased 200 hectares of land, but the present construction plan will only involve the use of 50 hectares. The refinery will manufacture the usual range of petroleum products. It will employ the latest refining techniques. There will be two docks with facilities for the discharge of crude oil from super tankers and for the loading of refined products in large vessels and canal barges. There will also be provision for the loading of liquefied petroleum gas.

Rise in U.K. Oil Consumption

U.K. OIL CONSUMPTION for the first nine months of 1961 was 33,485,424 tons. Reporting this, the Petroleum Information Bureau states that it is a rise of 8 per cent over January/September 1960. There was some slowing up in the growth in the use of black oils: demand for gas/diesel oil rose 11.6 per cent to 2,820,229 tons, and that for fuel oil (excluding refinery use) was 8.6 per cent higher at 13,380,661 tons. Motor spirit deliveries were 7.2 per cent up at 6,196,583 tons—compared with an 8 per cent rise over the first six months of the year. The lower rate of advance followed an increase of 3d a gallon in the duty on motor fuels which was imposed in July.

Due to mild weather, demand for burning oil declined 8.6 per cent to 767,503 tons. The largest percentage increase was in deliveries of liquid petroleum gases, propane and butane, which are increasingly used in gas making and in industry. These advanced 32.6 per cent to 146,305 tons. Oil used as feedstock for gas manufacture also increased in demand, light distillate feedstock by 20.3 per cent to 312,980 tons and refinery gases by 10.2 per cent to 189,618 tons. Among other products, aviation fuels advanced 21.3 per cent to 1,619,095 tons; bitumen deliveries were 10.7 per cent up at 905,509 tons and chemical feedstocks 0.6 per cent higher at 1,186,654 tons.

RECENT PUBLICATIONS

THE FRENCH have a knack of producing attractive pamphlets about their shipbuilding industry in which the main feature is the reproduction on a large scale of good photographs. The latest publication of G.E.N.E.M.A. (the French shipbuilding industry's export association), which is entitled *French Shipbuilding*, falls into this category. The text, which is in English, emphasises the degree to which the industry has been able to compensate for falling home demand by increased export sales (aided, of course, by Government assistance in maintaining competitive price levels). More impressive are the graphs which show how output has been increased substantially in the past five years with a diminishing labour force.

THE latest publication issued by James Gordon & Co Ltd, Dalston Gardens, Stanmore, Middlesex, deals with the company's new electrical automatic control system for shell and small watertube boilers.

RECENT SHIP SALES

CARGO steamer *Apollo* (ex-*Otello*, ex-*Saint-Andre*, ex-*Pierre Fournion*, ex-*Empire Unicorn*, 10,020 dwt, 7,123 grt, 4,886 nrt, built 1943 by Wm. Gray & Co Ltd) sold by Rederi for s.s. *Apollo* (Lars Gabrielson), Stockholm, to Polish buyers with survey passed delivery prompt Sweden for £145,000.

Motor tanker *Henning Maersk* (16,240 dwt, 10,106 grt, 6,117 nrt, built 1945 by the Odense Staalskibs A/S) sold by A/S D/S Svendborg & D/S of 1912 A/S (A. P. Møller) to the Keystone Shipping & Trading Co Ltd, Monrovia, and renamed *Pampa*, under the Panamanian flag.

Motor tanker *Fossvik* (ex-*Vikingen*, 12,278 dwt, 8,186 grt, 4,619 nrt, built 1949 by Harland & Wolff Ltd) sold by Fossvik A/S (Torger Moe), Sandefjord, to J. Stolt-Nielsen, Haugesund, and to be renamed *Stolt Avenir*. She has been idle under repair at Sandefjord since May 27.

Motor vessel *Industria* (2,920 dwt, 1,710 grt, 778 nrt, built by Lindholmens Varv, launched 1943 completed 1945) sold by Rederi A/B Svenska Lloyd to Norwegian buyers for about £105,000.

Motor ore-oil carrier *Rautas* (12,100 dwt, 9,125 grt, 5,317 nrt, built 1945 by A/B Gotaverken) sold by Trafik A/S Grangesberg-Oxelösund to Rederi A/B Rex for £205,000.

Motor coaster *Barken* (665 dwt, 499 grt, 284 nrt, built 1953 by Karlstad Varv) sold by O. F. Ahlmark & Co. Eft. A/B (Bengt Rejmer), Karlstad, to Sorren Petterson, Gothenburg, for £45,000 and renamed *Nordanfors*.

Cargo steamer *Duburg* (3,412 dwt, 1,705 grt, 871 nrt, built Kiel 1950 by Howaldtswerke A.G.) sold by Flensburger Dampferkompagni (H. Schuldt & Co), Kiel, to South American buyers with fairly prompt delivery.

Cargo steamer *Jalamohan* (ex-*Stanford*, 8,800 dwt, 5,969 grt, 3,584 nrt, built 1941 by Wm. Pickersgill & Sons Ltd) sold by Scindia Steam Navigation Co Ltd to Nigeen Shipping Co S.A. Panama (Tsavlis (Shipping) Ltd) to fly the Lebanese flag under the name *Nigeen Star*. She is understood to have realised about £64,000.

Cargo steamer *Erna Oldendorff* (ex-*Rijn*, 1,965 grt, 1,141 nrt, built 1916 by A. Vuijk & Zonen) sold by Egon Oldendorff, Lubeck, to Italian shipbreakers for about £25,000 to be delivered at Trieste in January.

Cargo steamer *Tatsui Maru* (6,779 grt, 3,843 nrt, built Harima 1945 by Mitsubishi Jukogyo) sold by Naigai Kisen K.K. to Japanese shipbreakers.

Cargo steamer *Eliza* (ex-*Corfleet*, 2,650 dwt, 1,803 grt, 1,015 nrt, built 1934 by S. P. Austin & Son Ltd) sold by L. D. & N. Nomicos, Piraeus, to the Cia. de Nav. Patricio Ltda, Costa Rica, transferred to Lebanese flag and renamed *Bruce M*.

Cargo steamer *Sorrentino* (ex-*Citta di Lecce*, ex-*Samuel A. Fabens*, 2,754 dwt, 1,599 grt, 950 nrt, built New Orleans 1944 by the Pendleton Shipyard Co) sold by Ibrahim Kalkavan, who was apparently the salvor after she went aground, to Stavros Daifas & Co, Piraeus, and renamed *Antonios III* under the Lebanese flag.

A NEW brochure featuring the ESD II marine boiler has been received from Foster Wheeler Ltd, Foster Wheeler House, London W1. The new boiler is the latest development in the company's series of practical marine boiler designs, and is a sequel to the original ESD type boilers which are fitted in a large number of vessels.

Two comprehensive articles dealing with the problem of corrosion are featured in the latest edition of *Wiggin Nickel Alloys*. These articles deal with the many variables affecting corrosion together with measures that can be taken to offset corrosive attacks. Copies of this brochure may be obtained from the company at Thames House, Millbank, London SW1.

THE December issue of *Design* contains an illustrated article by Geoffrey Salmon, comparing the interior design of the sister ships *Caesarea* and *Sarnia*, built for the British Transport Commission's Channel Islands service (SW, 29.3.61).

Future of Independent Airlines

EFFECTS OF THE LICENSING BOARD DECISIONS

By D. M. Brace

"THE independent airlines still regard the future as uncertain". Those words were written by Mr L. C. Hunting, president of the British Independent Air Transport Association, in his foreword to the Association's annual report last month. Within a few days of the publication of that report Cunard-Eagle had their North Atlantic licence rescinded by the Minister of Aviation, and the major independent carriers heard that the Air Transport Licensing Board had granted them licences to operate to a number of points within Europe, and also on some of the major United Kingdom routes. Neither of those unrelated actions made the future of the independents any more certain.

The independent airlines have for years been pleading for permission to operate scheduled services over some of the more lucrative routes in order to achieve some measure of security and so enable them to plan for the future. There seemed some likelihood of their achieving this when the Air Transport Licensing Board was set up early this year under the terms of the Civil Aviation (Licensing) Act, 1960. After hearing various minor applications the Board, in the early summer, got down to its first major problem—an application by Cunard-Eagle Airways to operate a scheduled passenger service across the Atlantic. Inevitably BOAC objected to the application. After a hearing lasting several days, and a delay while the Board considered the evidence which had been presented, it was announced that Cunard-Eagle Airways had been granted a licence to operate a daily service to the American eastern seaboard, including New York. In anticipation of their application being successful the airline had earlier placed an order for two Boeing 707 jet airliners. Then BOAC lodged an appeal—as they had every right to do under the terms of the Licensing Act.

It was generally felt that even if the commissioner who heard the appeal found in favour of the State corporation that the Minister would be bound to uphold Cunard-Eagle's licence. It was argued that this was the first important application that had been heard by the Board, an authority which the Minister of Aviation had set up. The members of the Board had been selected for their knowledge of aviation, and after weighing all the facts they had found there to be a requirement for a second British carrier over the Atlantic route. True, the North Atlantic airlines had had a very poor summer, but this was considered to be a temporary setback, and could hardly be taken into consideration when year after year previously there had been an average increase in North Atlantic air traffic of the order of 15 per cent.

Foundations Removed

When, therefore, Mr Peter Thorneycroft announced that he had decided to rescind the Cunard-Eagle licence it seemed that he had knocked away the very foundations on which the Air Transport Licensing Board had been built. His reasons for the rescission were particularly puzzling. There were two reasons—(1) The appellants (BOAC) had reasonably entered into financial commitments, notably in regard to aircraft purchases, designed to cater for all the traffic which might reasonably have been expected on the route licensed and all other routes over the next five or six years; and (2) the advent of another operator would cause diversion, and probably

material diversion, from BOAC in the sense that a Cunard-Eagle service, if successful, would inevitably carry traffic which might otherwise have been carried by the corporation.

On the first point, it was known long before the hearings before the Board just what aircraft BOAC had on order. Cunard-Eagle's approval was for one return service daily, and for this service, as well as those they are at present operating to the Caribbean, they considered two 707s sufficient. It would appear unlikely that BOAC would have had to cancel many of their VC-10s through the loss in traffic that might have materialised, and why were BOAC allowed to order three additional Boeing 707s while the hearing was in progress? On the second point, there undoubtedly would have been some diversion of traffic, but one would have thought that a once-daily service could hardly have been considered "material diversion".

Both corporations have, of course, tried to make great capital out of the point that the independents are trying to "move in" on the scheduled operation business after the State airlines have done all the spade work. It would, however, appear that BOAC and BEA have conveniently forgotten the fact that ever since the independent companies came into being immediately after the war they have been pleading to be allowed to operate these types of service. Hitherto the Government has argued that the traffic was not sufficiently established to allow further competition, but surely that argument can no longer apply. This year there have undoubtedly been too many seats chasing too few passengers, but this is likely to have been a temporary phase—not a firm indication of the future of North Atlantic travel. It is inevitable that traffic will go on increasing—at least, as far ahead as one cares to look—and if one accepts that premise then surely the present is as good a time as any to allow another operator on the route. After all, it is generally recognised that the first two years of operation on any route are likely to be uneconomic, while experience is gained and load factors are built up. On that basis, a service starting next May (as Cunard-Eagle had planned) would be unlikely to be attracting very many passengers before 1964, and by that time BOAC's own traffic should have shown a further growth.

Ultimate Effects

The ultimate effects of the Minister's decision may have far more lasting and serious effects than just the loss of the service to Cunard-Eagle. On the day following the announcement British United Airways withdrew an application to operate a service to Gibraltar, Las Palmas, Free-town and Lagos. The spokesman for the airline said that owing to the Minister's decision (on the grounds of BOAC's aircraft procurement programme) "the whole proceedings of the independent companies before the Air Transport Licensing Board have been farces". Certainly, if the Minister is to base his approvals on the order books of the State corporations, then it would seem to be a waste of time any independent airline applying for any service. BOAC have 45 of the new VC-10s on order; they have been designed for Atlantic operations, and also for the shorter-range routes which the Corporation operates to the East, Australia and Africa. Similarly, BEA

Air Transport Section

are awaiting delivery of 24 de Havilland Trident airliners. In both cases the orders were placed well over a year ago. Presumably both airlines can claim they have ordered sufficient aircraft "to cater for all the traffic which might reasonably be expected . . . over the next five or six years". If the Minister accepts these order books as indicative of the expected growth of the market, then it would certainly appear that the independents do not stand a chance of obtaining any licences to operate alongside the State corporations.

Even if the question of appeal is put on one side for the moment, there is still no guarantee that the independents will, in fact, receive approval to operate some of the routes. It must be remembered that present-day air transport development is governed, in large measure, by the bilateral agreements which various governments have signed on what services their various national fleets may operate into each other's country. What, for instance, is the French Government's and Air France's reaction likely to be to a twice-daily service between London and Paris operated by British United Airways? If one accepts that there is likely to be some diversion of traffic to the independent's flights, there is no guarantee that the whole of that diversion will be from BEA. How, then, is Air France to be compensated for traffic which it might justifiably claim has been lost to another operator who was not flying over the route when the bilateral agreement was signed? This is the type of problem that will be facing the Ministry of Aviation, and it is no doubt one reason why the Air Transport Licensing Board granted the licences on the basis of their becoming operative on 1 April 1963. It may well be that the discussions that must inevitably take place will not, in all cases, be satisfactorily concluded, so the list below of "licences granted" cannot be taken as a firm indication of the routes that the various independent companies will be operating in the summer of 1963.

In its comments, which accompanied the report announcing the licences, the Air Transport Licensing Board stated that in considering the circumstances under which a second British operator might be licensed for the route the Board had taken into account two factors:

- (1) The absolute level of BEA traffic on the route, and the forecast rate of increase;
- (2) the likely diversion of passenger traffic from BEA to the independent lines during the three-year period 1963-64 to 1965-66 inclusive.

In the Board's view it was a prerequisite for a second British operator on a route that the route should have reasonably dense traffic and a reasonable rate of growth. Where this prerequisite was satisfied the Board had taken as their criterion that the effect of the independent's operation on BEA should be such that the corporation's average carryings in the first three years of the independent's operations (1963/64-1965/66) should not be less than the traffic they now expect to carry in 1962-63. In other words, there should be no actual decline in BEA's traffic averaged over these three years as a result of the introduction of a second British operator, but merely a temporary slowing down.

In view of the considerable sums of shipping finance now tied up with the major independent airlines the present unsettled situation surrounding these companies must be causing serious concern in some shipping board rooms. It is difficult to reconcile the Minister of Aviation's present attitude with his oft-repeated assurances that greater opportunities would be given to the independent companies, and until there is some indication that Mr Peter Thorneycroft intends to practice what he preaches there will undoubtedly be continued concern—not only in

shipping boardrooms, but also in those of the airlines themselves.

APPLICATIONS TO AIR TRANSPORT LICENSING BOARD

GRANTED	
Airline and Route	Frequency
British European Airways	
London-Marseilles	Unlimited
Heathrow or Gatwick-Malaga	Seven weekly
British United Airways	
All from Gatwick to:—	
Paris	Two daily
Amsterdam	One daily
Zurich	Three weekly
Basle	Two weekly
Tarbes	Two weekly (May-Oct.)
Genoa	One daily
Milan	Three weekly (Apr.-Oct.)
Athens	One weekly (Mar.-Oct.)
Barcelona	Two weekly (May-Sept.)
Palma	Four weekly (Apr.-Oct.)
Malaga	Two weekly (Apr.-Oct.)
	One weekly (Nov.-Mar.)
	One weekly (Dec.-May)
	Two weekly (June-Nov.)
Lisbon-Madeira	
Cunard Eagle Airways	
Heathrow &/or Gatwick-	
Geneva	Three weekly
London-Copenhagen &/or	
Stockholm	Three weekly (May-Oct.)
	One weekly (rest of year)
Heathrow/Gatwick-Venice	Two weekly (Apr.-Oct.)
Manchester &/or	
Birmingham-Nice	Four weekly (Apr.-Oct.)
	One weekly (Nov.-Mar.)
Heathrow/Gatwick-Dublin	Four weekly (Apr.-Oct.)
	Three weekly (Nov.-Mar.)
Heathrow/Gatwick-Belfast	Seven weekly
Heathrow/Gatwick-	
Edinburgh	One daily (Apr.-Oct.)
	Five weekly (Nov.-Mar.)
Heathrow/Gatwick-Glasgow	One daily
Liverpool-Dublin	Four weekly (Apr.-Oct.)
	Two weekly (Nov.-Mar.)
Starways	
Chester-Isle of Man	Two weekly (June 1-Sept. 15)
REFUSED	
British European Airways	Tradair
London-Genoa	Southend-Basle
London-Lisbon-Madeira	Southend-Klagenfurt
	Southend-Genoa
British United Airways	Southend-Venice
Gatwick-Frankfurt	Southend-Naples
Gatwick-Dusseldorf	Southend-Barcelona
Gatwick-Munich	Southend-Palma
Gatwick-Cologne	Southend-Malaga
Gatwick-Nice	Southend-Teneriffe
Gatwick-Naples	
Gatwick-Rome	Starways
Gatwick-Nicosia	Chester-Dublin
Gatwick-Dublin	Chester-Belfast
Cunard-Eagle Airways	
Heathrow/Gatwick-Hamburg-Berlin	
Heathrow/Gatwick-Nice &/or Palermo &/or Malta	
Heathrow/Gatwick-Turin	
Heathrow/Gatwick-Milan	
Heathrow/Gatwick-Liverpool-Isle of Man	
Heathrow/Gatwick-Liverpool	
Heathrow/Gatwick-Manchester	
Heathrow &/or Gatwick-Birmingham	
Manchester &/or Liverpool-Dublin	
Silver City Airways	
Lydd or Manston-Basle	
Manston or Bournemouth or London-Marseilles-Genoa	
Manston or Bournemouth or Gatwick-Lisbon and Porto Santo	
East Anglian Flying Services	
Birmingham &/or Southend-Basle &/or Zurich	
Birmingham &/or Southend-Albenga	

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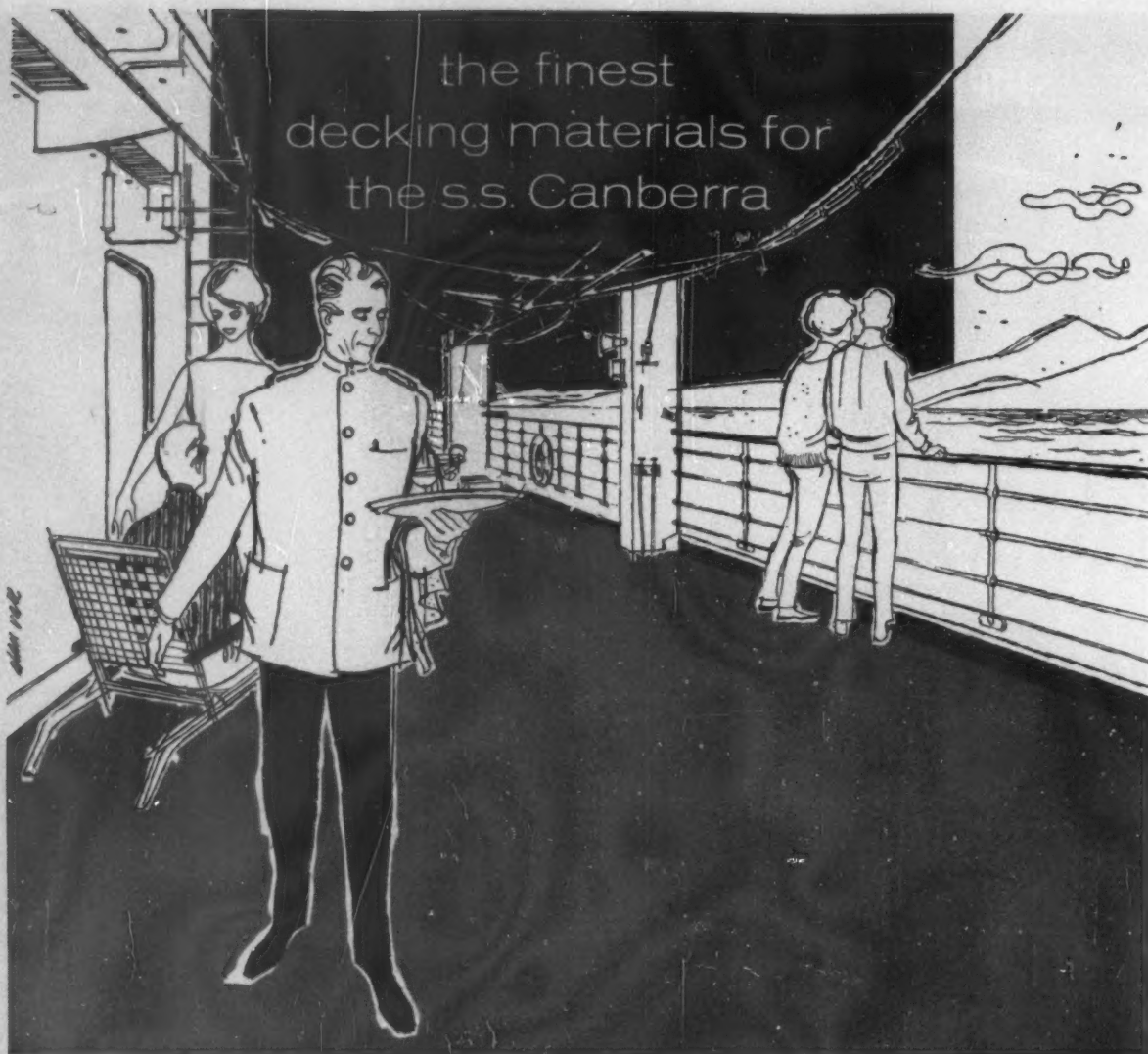
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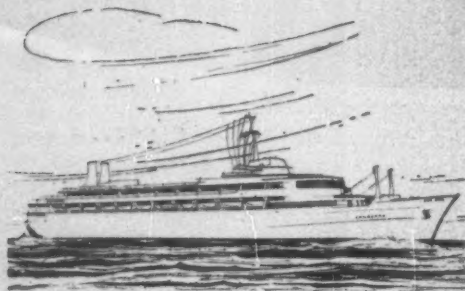
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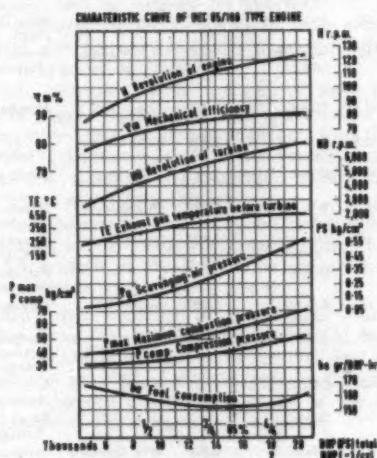
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Japanese-Designed Diesel Engine

THE MITSUBISHI UEC TYPE 85/160 LARGE-BORE ENGINE

IT IS now over 29 years since Mitsubishi Zosen K.K. first began production of their own designed MS type two-stroke diesel engines at their Nagasaki works. Following the success of this engine they developed a higher powered engine with cylinders of 720mm bore, which was named the Mitsubishi UE type, and later an engine of 750mm bore and 1,500mm stroke. Their latest development is the nine-cylinder UEC 85/160 type engine with cylinders of 850mm bore and a stroke of 1,600mm. This engine, based on the 750mm bore engine, develops 2,000 bhp per cylinder, enabling an output of 24,000 bhp to be obtained with 12 cylinders.

The first two nine-cylinder engines of this new type will be installed in two Japanese tankers, one the 48,200-dwt *Seiwa Maru* and the other an unnamed vessel of 47,750 dwt. Other large-bore engines being built in Japan are the 900mm bore Sulzer, the 840mm bore B & W and the 840mm bore M.A.N. engine; all, of course, being built under licence.

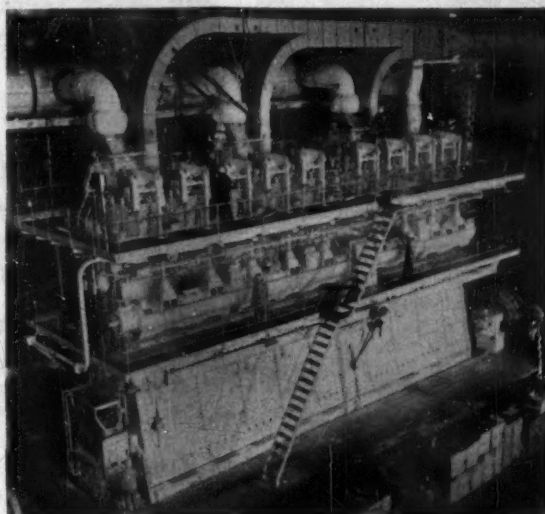


The UEC 85/160 engine has a maximum output of 18,000 bhp with a b.m.e.p. of 7.57 kg/sq cm (107.64 lb/sq in), about 10 per cent increase over that of the UEC 75/150 engine. The fuel consumption, at about 150 gm/bhp-hr (0.33 lb/bhp-hr), is low.

The principal details of the 9 UEC 85/160 engine are as follows:—

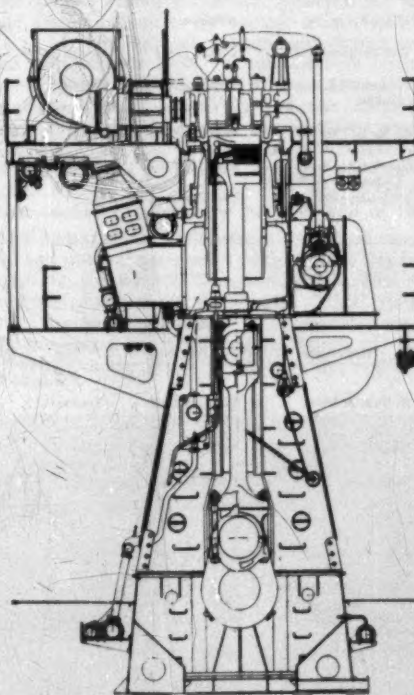
Number of cylinders	9
Bore	850mm
Stroke	1,600mm
Speed	120 rpm
Output	16,500 bhp
Output per cylinder	1,833 bhp
Piston speed, average	6.4 metres/sec
B.m.e.p.	7.57 kg/sq cm
Height overall	18,550mm
Breadth of bedplate	4,000mm
Weight	668 tons
Weight per bhp	40.4 kg
Fuel consumption	152 gm/bhp-hr

The engine has uniflow scavenging and is fitted with four turbochargers. The construction of the new engine has been simplified as compared with other UE types and offers easier operation and maintenance. For example,



The engine on test in the makers' works

using a joint water jacket, three cylinders are mounted in one block, whereas the older engine has separate cylinder blocks. There is also only one camshaft for both fuel control and exhaust valve operation as compared with the earlier type of engine which has one camshaft for each operation. The camshaft casing is of



Sectional Elevation of 850-mm bore UEC engine

welded construction and is therefore more rigid than the older type engine which has a cast casing. The pipework too has been simplified.

NEW CONTRACTS

Shipowners	No. of Ships	Type	Tons d.w. (gross)	Dimensions (ft.) L.b.p.(o.a.) x B. x D.(dft.)	Delivery	Speed (knots)	Propelling Machinery	Total h.p.	Engine Builders	Shipbuilders
Yards in Great Britain and Northern Ireland										
British owners	1	Cargo	12,000	—	—	—	Diesel	—	Shipbuilders	Barclay Curle & Co
Overseas Yards										
Norwegian owners	2 (907/8)	Bulk carriers	30,000	—	—	—	—	—	—	Bremer Vulkan
Foreign owners	1 (1148)	Ore/oil carrier	6,950	349.1 x 51.9	—	—	M.A.N. diesel	—	Shipbuilders	Kieler Howaldtswerke
Lloyd Brasileiro	1	Cargo	10,000/ 12,000	459.33 x 64 x 40	—	16.5	M.A.N. diesel	7,400	Verolme, IJsselmonde	Verolme Estaleiros Reunidos do Brasil
Rederiet M. Thorvik	1	Cargo	18,000	—	1964	—	B & W diesel	7,500	Akers M.V.	Haugesund M.V.
Melsom & Melsom, Larvik	*1	Bulk carrier	25,000	—	—	—	M.A.N. diesel	—	Shipbuilders	Kieler Howaldtswerke
Limerick S.S. Co, Dublin	1	Coaster	725	—	1962	11	Diesel	750	Deutz	Jac Bodewes, Scheepswerf Hoogezand

* Change of contract from 18,000-dwt vessel

LAUNCHES

Date	Shipowners	Ship's Name and/or Yard No.	Type	Tons d.w. (gross)	Dimensions (ft.) L.b.p.(o.a.) x B. x D.(dft.)	Speed (knots)	Propelling Machinery	Total h.p.	Engine Builders	Shipbuilders
Yards in Great Britain and Northern Ireland										
Nov. 25	Turkish owners	Atas One (921)	Workboat	(15)	—	—	Tw-scr. diesel	—	—	Rowhedge Ironworks
Dec. 8	BP Tanker Co	British Venture	Tanker	35,500	640(678) x 86 x 50 (37.58)	15.5	Sulzer diesel	14,000	Shipbuilders	Hawthorn Leslie
Dec. 5	Bank Line	Inverbank	Cargo	12,030	450 x 62 x 29.5(29)	14	4-cyl diesel	6,640	Shipbuilders	Wm. Doxford & Sons
Dec. 6	Trader Navigation Co	Scottish Trader	Bulk carrier	15,800	450.9 x 62 x (29.42)	13	4-cyl Doxford diesel	4,800	N.E. Marine	Austin & Pickersgill
Overseas Yards										
Nov. —	Tirrenia S.p.A.	Citta di Napoli (631)	Pass	(5,500)	—	21.5	Diesel	12,600	Fiat	Navalmecanica
Nov. —	Roblon Cia, Panama	— (521)	Ore carrier	21,867	551.25(585.67) x 71.42 x 44.33(31)	15.5	B & W diesel	9,000	Shipbuilders	Ch. de l'Atlantique
Nov. —	Govt. of Rumania	Victoria	Cargo	4,500 (3,096)	—	—	Diesel	—	—	Galatz Shipyard
Nov. 6	Great Eastern Shipping Co	Jag Vijay (3904)	Cargo	12,700 (8,800)	452.75(489.67) x 61.67 x 38.9(29.2)	16.5 (T)	B & W diesel	5,400	Shipbuilders	Hitachi S.B. & E. Co, Innoshima
Nov. 22	J. M. Skaugen	Skaustrand (1539)	Bulk carrier	24,500 (15,860)	551.2 x 75 x 46(31)	16	Sulzer diesel	9,100	Uraga Dock	Mitsubishi S.B. & E. Co, Nagasaki
Nov. 23	U.S.S.R.	Nikolayevsk	—	—	—	—	Diesel	—	—	Mathias-Thesen Werft
Nov. 24	Det Bergenske D/S	Cygnus (425)	Cargo	8,500 (6,000)	400 x 58 x 35(27)	16	B & W diesel	5,540	Akers M.V.	Bergens M.V.
Nov. 25	Limerick S.S. Co, Dublin	Oranmore (108)	Coaster	725	—	11	Diesel	750	Deutz	Jac. Bodewes Scheepswerf Hoogezand
Nov. 25	D. D. G. "Hansa"	Axenfels (880)	Cargo	7,000 (5,500)	—	—	Diesel	—	M.A.N.	A. G. "Weser", Bremerhaven
Nov. 25	Service des Ports et Chaussees de Nantes	Rene Siegfried	Dredgar	(2,500)	—	—	Diesel	—	—	At. et Ch. de Bretagne
Dec. 5	Irish Shipping	Irish Rowan (645)	Bulk carrier	14,900	500 x 67 x 40.5(30)	15	Diesel	6,800	Wm. Doxford & Sons	Verolme Cork Dockyard

TRIAL TRIPS

Date	Shipowners	Ship's Name and/or Yard No.	Type	Tons d.w. (gross)	Dimensions (ft.) L.b.p.(o.a.) x B. x D.(dft.)	Speed (knots)	Propelling Machinery	Total h.p.	Engine Builders	Shipbuilders
Yards in Great Britain and Northern Ireland										
Nov. 28	R. Irvin & Sons	Ben Lora (329)	Trawler	(215)	104 x 23 x 12.5	—	6-cyl diesel	635	Mirrlees Bickerton & Day	John Lewis & Sons
Dec. 5	Govt. of Ghana	Amanzule (152)	Tuna purseiner	(300)	130 x 30.33	11	8-cyl diesel	1,000	National Gas	T. Mitchison
Dec. 6	Bank Line	Testbank (889)	Cargo	12,030 (8,500)	450(487) x 62 x 38.5 (28.9)	—	4-cyl diesel	6,640	Shipbuilders	Wm. Doxford & Sons
Overseas Yards										
Oct. 16	American Export Lines	Export Banner (324)	Cargo	10,200 (9,000)	470(493) x 73 x 42.2 (27)	18.5	Geared turbine	12,500	G.E.C.	National Steel S.B. Co
Oct. 19	Victory Carriers Inc	Monticello Victory (1672)	Tanker	46,000 (30,000)	705 x 102 x 50(37.58)	16.5	Geared turbine	15,000	—	Bethlehem Steel Co, Quincy
Nov. —	Cargo Ships El Yam, Haifa	Har Gilead (773)	Refrig. cargo	5,800 (6,700)	(446.42) x 56.58 x (25.42)	19	9-cyl diesel	8,150	M.A.N.	Deutsche Werft
Nov. —	Overseas Freighters Corp	Pelagos (534)	Bulk carrier	17,300 (11,800)	486.5(523.75) x 69.2 x 41(30.5)	16.4	6-cyl diesel	8,100	M.A.N.	Akers M.V.
Nov. —	Stamers Rederi A/S, Bergen	Trollgar (644)	Cargo	13,900 (9,000)	452.75(493.33) x 62.9 x 41.33(30)	15	7-cyl M.A.N. diesel	6,130	Shipbuilders	Verolme United Shipyards
Nov. —	Soc. Navale Caennaise	Boree	Cargo	3,600 (2,350)	301.9(325.2) x 47.42 x 28.5	18	Two Pielstick diesels	5,600	S.E.M.T.	Ch. et At. de Bretagne
Nov. 27	Odd Godager & Co, Oslo	Norse Lady (193)	Bulk carrier	17,950 (11,000)	(555) x 70 x 41.25 (30.1)	15.75	8-cyl G.V. diesel	8,750	Shipbuilders	Uddevallavarvet
Dec. —	Maritime & Commercial Corp, Panama	Albode (647)	Bulk carrier	24,000 (16,000)	552.9(592.5) x 73.5 x 47.95(33.33)	15.25	9-cyl M.A.N. diesel	8,150	Shipbuilders	Verolme United Shipyards

MARITIME NEWS IN BRIEF

AS FROM 1 January 1962 Mirrlees, Bickerton & Day Ltd will change its name to Mirrlees National Ltd, and the undertakings of the National Gas & Oil Engine Co Ltd, Ashton-under-Lyne, will be transferred to the renamed company. The activities carried on at National Gas & Oil Engine Co Ltd will continue, but all accounts and communications in respect of services and supplies for the Ashton works should be addressed to Mirrlees National Ltd, Hazel Grove, Stockport, Cheshire. All correspondence and orders for spare parts for both factories should be addressed to Mirrlees National Ltd, Spare Parts Division, National Works, Ashton-under-Lyne. All activities conducted by Mirrlees, Bickerton & Day Ltd will continue under the name of Mirrlees National Ltd as from 1 January 1962.

SIR DONALD ANDERSON, who has been chairman of the executive council of the Shipping Federation since 1950, is not seeking re-election in May 1962. The vice-chairman of the executive council is Col W. L. Denholm, and Mr Ford Geddes has been appointed an additional vice-chairman. Lord Sanderston has been re-appointed president for the ensuing year.

MR J. E. SUNDERLAND, director of Enfield Cables Ltd, and Enfield-Standard Power Cables Ltd, has been elected chairman of the Cable Makers' Association for 1962.

MR H. L. READER, general manager of MacAndrews & Co Ltd in Spain, will be retiring on December 31. Mr Reader has been employed by the Company in Spain since 1920. Mr K. G. Reid, the present assistant general manager, has been appointed to succeed Mr Reader.

MR W. G. DUNCAN, general manager of Palm Line (Agencies) Ltd in Lagos, Nigeria, has been appointed to a new post in the company—that of general manager, Palm Line (Agencies) Ltd for Commonwealth West Africa. His responsibilities will cover the Agencies' representation in all the ports of Nigeria, Ghana and Sierra Leone.

MR R. BILLINGTON has been appointed Inspector of Wireless Telegraphy in the Wireless Telegraph Section of the Radio Services Department of the Post Office to succeed Mr T. A. Davies, who retires at the end of the year.

THE DEATH has occurred of Captain J. Francis Drake, marine superintendent for the Cunard Line at Southampton. He joined Cunard as an apprentice in 1916 and received his first command in 1947. Later he was staff captain in the *Caronia* and the two *Queens* and master of the *Samaria* on the Canadian run. He came ashore in 1952.

ENGINES-AFT SHELL TANKER LAUNCHED

The Shell tanker "Voluta", 34,750 dwt, has been launched at the Haverton Hill Shipyard of the Furness Shipbuilding Co Ltd. She is the 175th tanker to be constructed by the builders. In the illustration on the left, the sponsor, Lady Hoyer Millar, wife of Sir Frederick Hoyer Millar, Permanent Under-Secretary of State, Foreign Office, is seen on

the launching stand with Mr W. T. Butterwick, managing director of the Furness Shipbuilding Co Ltd. The "Voluta" is seen going down the ways on the right. Her principal dimensions are length overall 664ft 10in, length b.p. 640ft, breadth moulded 89ft 9in, depth moulded 47ft 9in and draught 34ft 6in. The designed trial speed is 16 knots



THE DEATH has occurred of Mr H. B. Smith, founder and chairman of Argosies Ltd, shipbrokers, and associated companies.

THE DEATH has occurred of Commander H. P. Mead, the Naval historian and Honorary Librarian of Lloyd's since 1939.

MR J. AULD, European accountant for Canadian Pacific Steamships Ltd, has retired. He has been succeeded by Mr Walter Davies.

MR J. A. WASH, secretary of Shaw Savill & Albion Co Ltd has been appointed a director. Mr Wash joined Geo. Thompson & Co Ltd in August 1916, and transferred to Shaw Savill in 1932. He was appointed secretary of Geo. Thompson & Co Ltd in 1941 and has been a director of that company since 1957. Mr Wash was secretary of the Aberdeen & Commonwealth Line Ltd for many years from 1946.

MR MAX W. WILSON, of the British & Continental S.S. Co Ltd (Liverpool) has been elected chairman and Mr D. L. J. Mortelman, of the General Steam Navigation Co Ltd (London) vice-chairman of the Short Sea Liner Section of the Chamber of Shipping.

COMMANDER E. W. RIDLEY has joined Ultra Electronics Ltd as a project officer.

COMMANDER G. A. MOORE, marine superintendent of the Head Line, Belfast, has died at the age of 56. Joined the Ulster Steamship Co Ltd in 1922 and came ashore in 1950 as deputy assistant to the marine superintendent. Captain W. J. Finlay, whom he succeeded on his retirement.

MR REGINALD CUTLER has been appointed secretary of Metal Industries Ltd in succession to Mr Norman Clark.

THE 1961 trend already noted in monthly traffic reports of increased downbound and less upbound cargo traffic moving through the St Lawrence Seaway is reflected in preliminary toll traffic statistics for the current navigation season up to and including October. However, for the Montreal-Lake Ontario Section, the current month shows an increase of 19 per cent for both upbound and downbound traffic compared with October 1960. The total of both upbound and downbound cargoes for October 1961 was 3,474,317 tons, an increase of 561,701 tons or 19.3 per cent over the same month a year ago. For April-October the upbound 1961 tonnage was 9.3 per cent less than that recorded for 1960, while the downbound traffic increased by 29.6 per cent over last year's figures. Total cargo for this period during 1961 was 20,186,605 tons, an increase of 11.8 per cent over the 1960 total of 18,049,035.

VICKERS-ARMSTRONGS (ENGINEERS) LTD have made cross licensing and selling agreements with Racine Hydraulics & Machinery Inc., of Racine, Wisconsin, U.S.A. This reciprocal agreement will complement the Vickers "VSG" range of oil hydraulic equipment. Vickers will manufacture Racine hydraulic equipment at its Weymouth Works and will distribute it throughout the British Commonwealth and to Europe.



BUREAU WJSMULLER, Towage and Salvage Company, at Ymuiden, have placed a contract with the Scheepsbouw Maatschappij Kramer & Booy, at Kootstertille, for two 2,950-ihp vessels. After the commissioning of these tugs the Wjismuller fleet will consist of 17 units.

ARMSTRONG CORK CO LTD, the originators and manufacturers of the ships decking compositions now known as "Aranbee," announce that their long association with Rowan & Boden Ltd, will come to an end on December 31 in accordance with the agreement between them. From January 1, Armstrong Cork Co Ltd will manufacture and sell these decking compositions under the registered trade name of "Accodek" and their marine agents for the United Kingdom will be Durastic Ltd.

MEDITERRANEAN SEAWAYS LTD, active in the chartering fields all over the world since 1956, have gradually increased their own fleet, which now consists of three cargo vessels, *Eyal*, *Carmela* and *Leora*. Mediterranean Seaways vessels are mainly plying between Mediterranean and Black Sea ports, but also to the United Kingdom and the Continent.

SWAN HUNTER & WIGHAM RICHARDSON LTD, Wallsend, are carrying out further improvements to their 560ft-long No 1 dry dock, and as a result the dock will be out of use until next spring. Among other things, part of the dock bottom and walls, are being rebuilt.

THE CORPORACIÓN IBERO AFRICANA, S.A., Las Palmas, has opened a new regular shipping service between Rotterdam and Hamburg as loading ports and Las Palmas and Santa Cruz de Tenerife as ports of discharge. Provisionally, three-weekly departures are scheduled. The European agents are N.V. Scheeps- & Landtransport Mij, Rotterdam.

* * *

THE MINISTRY OF AVIATION has decided, in order to assist in its evaluation of the possibility of using hovercraft to meet military requirements, to institute a research programme at the Royal Aircraft Establishment at Bedford. The Ministry is purchasing from Cushioncraft Ltd an experimental air cushion vehicle C.C.2, which has just been completed, to assist in the research programme. The R.A.E. will also be associated with the research programme on the SRN.1 and the forthcoming programme on the SRN.2.

THE VOLUME of cargo carried by BOAC on its trans-Pacific services boomed spectacularly in October. Revenue freight on the route, which links New York, San Francisco and Honolulu with Tokyo and Hong Kong, increased nearly 500 per cent compared with October 1960.



NEW TRINITY HOUSE PILOT VESSEL

The pilot vessel "Patrol" has recently been completed by Brooke Marine Ltd, Lowestoft, for the Corporation of Trinity House. She has now taken up her duties as a tender between Dover and Dungeness pilot stations. She has a length o.a. of 139ft, a beam of 24ft and a draught of 10ft 5in. Power is supplied by two Lister Blackstone six-cylinder diesel engines each developing 495 bhp which drive a single screw. Accommodation has been provided for 12 pilots



NEW BRITISH-BUILT ORE CARRIER

Austin & Pickersgill have completed the 18,380-dwt ore carrier "Finnamore Meadow" for Falaire Ore Carriers, Bermuda. She was completed in the record time of 103 days. Throughout the accommodation, Fablonite decorative laminate woodgrains have been used for bulkheads. From the range of 11 woodgrains available, over 12,000 ft of Oak Buff and Birch Grey were chosen

THE guided missile destroyer *London* has been launched by the Duchess of Gloucester at the yard of Swan, Hunter & Wigham Richardson Ltd, Wallsend. The destroyer was laid down in February last year and is due to be commissioned in 1963.

A 750-TONS floating dock has been launched in the Kishon basin near Haifa. It was built locally according to German plans and under Dutch supervision, at a cost of I£1 mn, has a lifting capacity of 1,100 tons and can receive ships of up to 3,000 dwt.

THE Cantieri Riuniti dell'Adriatico, at Monfalcone, have laid the keel of a new dry cargo motorship ordered by Lloyd Triestino as part of the modernisation and increase of the company's fleet. It is the first of a series of four sister ships of 10,000 dwt each, which will be built in Italy for service between Italy and India and Pakistan.

THE NEW TANK at the Admiralty Experiment Works, Haslar, Hants, will be opened by The Duke of Edinburgh on December 18.

FIFTY YEARS AGO

From THE SHIPPING WORLD of 13 December 1911

The Cunard liner *Mauretania* which broke away from her moorings during a southerly gale of Wednesday evening of last week, and drifted ashore in the Mersey, has had to abandon her intended voyage which was to break all previous records; but happily the *Lusitania* was available to take her intended sailing. Until a thorough examination of the *Mauretania* has been made, it cannot be known whether she has sustained any bottom injury, but if such is found to be the case it is believed it will be very slight, and will necessitate no claims being made upon underwriters.

Today we are all reading the details of the wonderful ceremony at Delhi yesterday. The gorgeous display owed much to the Oriental jewels and "cloths of gold" that dazzled. Their Majesties, the central figures in this unique ceremonial, though they did not attempt to vie with the Native Princes in absolute gorgeousness, bore worthily, none the less, the stars and jewels we Western people associate with State functions. The Crown jewels used were taken out to India by the *Medina* in a special safe. This safe was placed in a small cabin, admission to which was allowed only to their Majesties themselves. The name of keeper of the Crown Jewels, Mr. Bell, is inscribed above the door, and his responsibility for the Crown and other jewellery is no sinecure.

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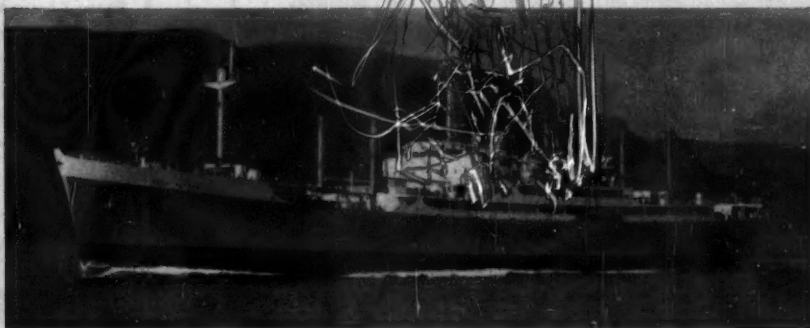


M.V. IBERIC

Owners: Shaw Savill & Albion Co. Ltd.

Photograph by courtesy of W. Raiston Ltd. Glasgow.

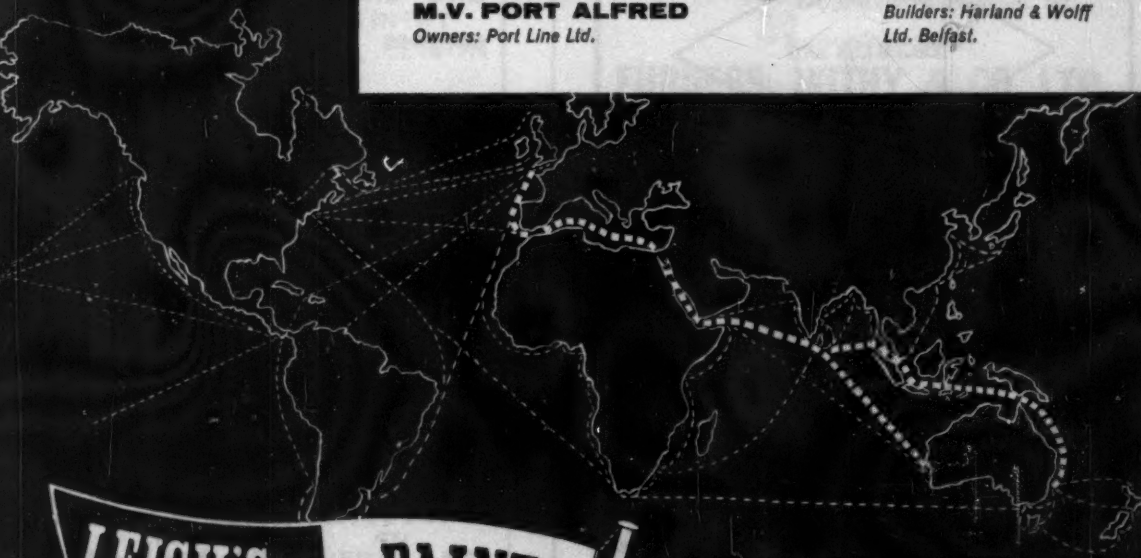
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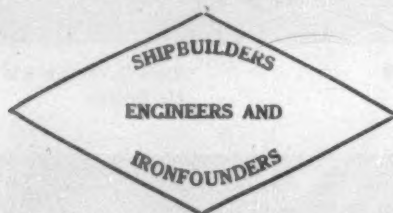
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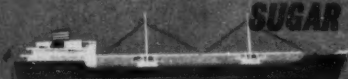
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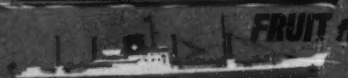
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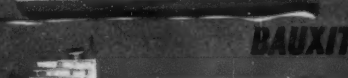
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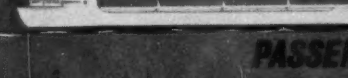
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